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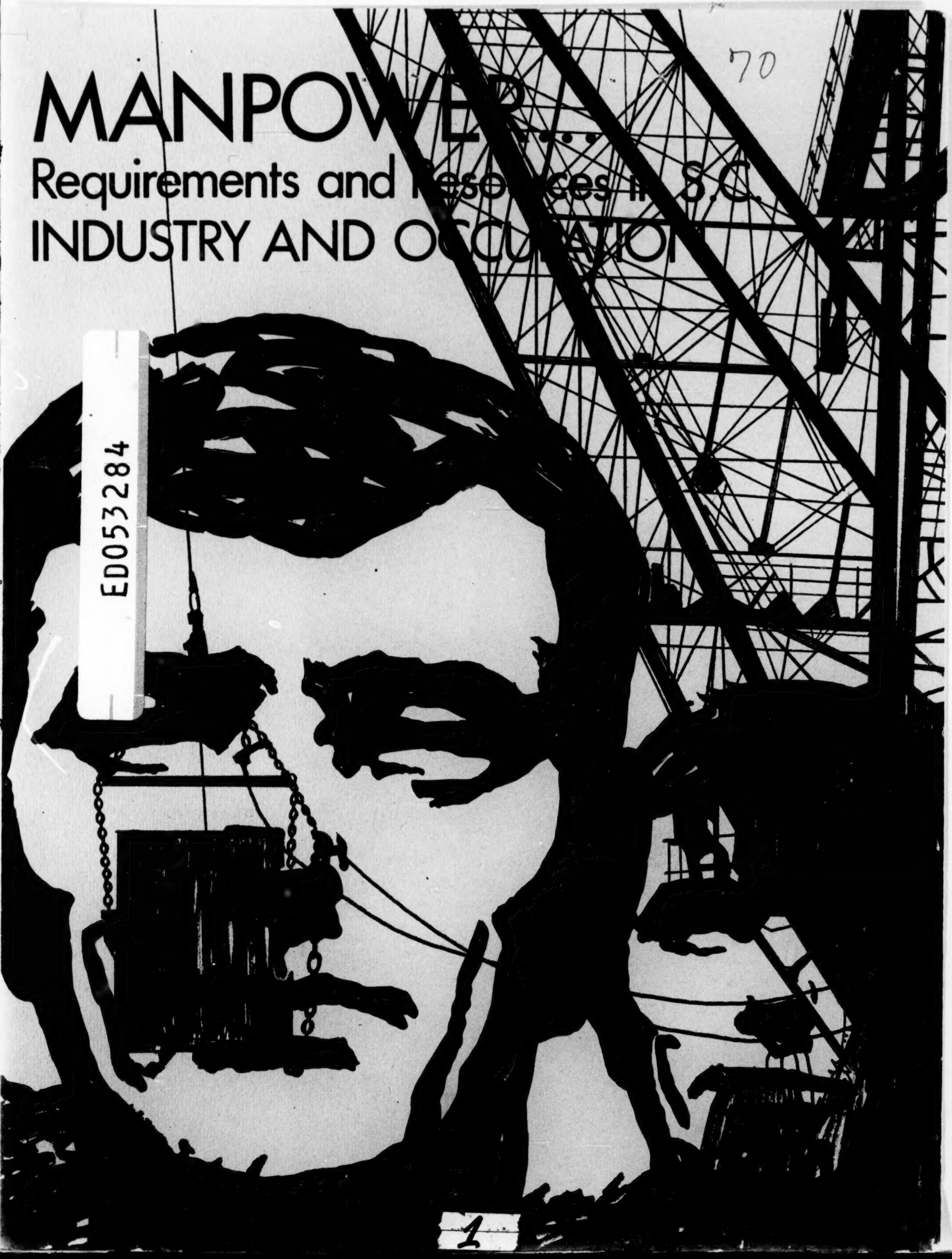
ABSTRACT

The population of South Carolina is expected to grow 1.1 percent annually from 1960 to 1975 compared with 1.3 percent for the United States. Total employment is expected to grow at a rate of 1.9 percent for the State and the Nation. In 1960, for every 100 jobs in goods-producing industries in South Carolina, there were 80 jobs in service-producing industries. By 1975, the number of goods-producing and service-producing jobs are expected to be about equal. There were more blue collar workers than white collar workers in South Carolina in 1960 while the reverse was true for the United States as a whole. This relationship is expected to continue through 1975. Between 1968 and 1975, it is forecast that 345,000 jobs will have to be filled. A survey of the manpower resources indicated that an average of 38,000 workers annually would be supplied for expansion and replacement needs and that 49,000 new entrants to jobs would be required annually. Greatest needs will be for operatives, service and clerical workers, craftsmen, and professional personnel. (BC)

MANPOWER

Requirements and Resources in S.C.

INDUSTRY AND OCCUPATION



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MANPOWER

Requirements and Resources in S. C.

INDUSTRY AND OCCUPATION

SOUTH CAROLINA EMPLOYMENT SECURITY COMMISSION

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FOREWORD

Economic policy in the United States is directed toward maximizing job opportunities while minimizing unemployment. Over the years, the problem of unemployment has been attacked through a series of measures including the Area Redevelopment Act of 1961, the Manpower Development and Training Act of 1962, and the Vocational Education Act of 1963. The Federal income tax cut in 1964 was designed to stimulate the economy. South Carolina's state program for technical education was an outgrowth of this earlier national legislation. All of these approaches were necessary at the time and each of them achieved some measure of success.

The legislation mentioned above explicitly stated that education and training programs should be related to occupational needs. Additional legislation, including the Economic Opportunity Act of 1964, the Civil Rights Act of 1964, the Higher Education Act of 1965, and the Appalachian Regional Development Act of 1965 focused attention on the need for information about future skill requirements. It is this need for reliable up-to-date information on manpower requirements and resources that provides the basic motivation for this work.

This study was prepared by staff of the Research and Statistics Section of the South Carolina Employment Security Commission under the direction of William B. Richey, Chief of Research and Statistics. Other staff members contributing significantly to the research and writing were Pinckney K. Holmes, Senior Labor Market Analyst, and Judy F. Coward, Junior Labor Market Analyst.

The U. S. Department of Labor provided assistance through the Manpower Administration and the Bureau of Labor Statistics without whose assistance this work would not have been possible at this time. Special acknowledgements are extended to George F. Fowler, Statistician with the Southeastern Regional Office, U. S. Bureau of Labor Statistics for his overall technical assistance and to Vladimir D. Chavrid and his staff, of the Manpower Administration, for their guidance and unflagging encouragement.

As this study progressed, questions regarding the content and format of the information to be presented were discussed with representatives of other federal and state agencies, trade groups, and labor unions. Their cooperation and assistance is gratefully acknowledged.

INTRODUCTION

During the last generation, a panorama of war, peace, recession, more armed conflict, and unparalleled prosperity has unfolded. Simultaneously, an economic, industrial, technical, psychological, social, and political upheaval has been going on for all to see. It would be naive to assume that these transformations could take place without tremendous impact on the job market. As a matter of fact, these are but a few of the many forces with far-reaching implications which are constantly at work in the field of manpower.

Manpower policy today is designed to maximize the development and utilization of all our human resources. That policy, stripped to its barest form, also serves as our manpower program objective.

For years, South Carolina's economy has been characterized by growth and change—growth in size and composition and change in communication, research and development, technology, transportation, education and skills to mention only the more obvious. One of the most striking changes resulting from these developments has been the shift from farm to nonfarm work. Of the civilian work force today, only about eight out of every hundred are engaged in farm work, and the proportion is declining every year. Coupled with a rapidly expanding and increasingly diversified economy such as ours, the emphasis has shifted to such industries as manufacturing, government, service and trade. Inevitably, the occupational composition of the work force as well as the skills required in each job also have changed. This process apparently has outpaced our ability to adjust. Consequently, we face a real dilemma in that there seems to be an abundance of job opportunities and the people to fill them, but we are unable to bring the two together. This is sometimes due to demographic differences but more often than not it is due to the fact that there has been and always will be a disparity between job requirements and qualifications of job seekers. During periods of rapid change such as experienced in recent years, the problem is more acute than at other times.

From the foregoing, it follows that current manpower needs are uncertain guides to future requirements. We cannot operate in a vacuum of information concerning our economy and our people. Right now, there is a growing demand for knowledge about the shape of the manpower future, and we are unable to answer many of the questions that have arisen. With the deepening involvement of government, private industry, and unions in manpower training and planning, it is imperative that some effort be made, within reasonable limits of time and cost, to identify manpower problems in advance of their occurrence and thereby provide guides for developing and implementing public and private programs in the fields of education and training. This presumes a need for continuous in-depth assessment of the job market and the forces affecting it, for the job market is certainly dynamic in every sense of the word. We must know not only how many are employed, but where, in what industries, and in what occupations. In the final analysis, this is the only way that planners involved with building educational and training facilities and developing curricula on all academic strata as well as those persons engaged in vocational guidance and counseling can prepare today to meet tomorrow's needs.

The U. S. Bureau of Labor Statistics has developed projections of national manpower requirements to 1975 along with a great deal of information on technological trends in major industries and the probable effect of these changes on employment levels and occupational patterns. The information has been arranged in the form of a guidebook entitled, *Tomorrow's Manpower Needs.* It consists of four volumes and was distributed earlier this year. From the point of view of States, the two most significant contributions in the report are Volumes I and IV which provide, respectively, a methodology for use by States in developing long-range forecasts and the industry-occupational matrix, i.e., a detailed distribution of the occupational composition of some 116 industries in the economy.

Patterned after the national study, projections of South Carolina's manpower requirements and resources have been made to 1975. The manpower forecasts contained in this study were made within the framework of the following assumptions:

1. No significant change is anticipated in our national defense posture. As in the past, new tensions will develop internationally but will not result in total war.
2. The Nation's economy is expected to reflect moderate to substantial growth and become more complex.
3. South Carolina's economy is expected to reflect moderate to substantial growth with no appreciable change in the trends developed over the last several years.
4. The rate of unemployment in the State will average about 4 per cent which will be somewhat below the experience in recent years.

The Commission intends to continue to work in the area of long-range forecasts by periodically reviewing and adjusting the projections and refining and expanding the detail. Only in this manner can the forecasts reflect current adjustments and emerging trends in the economy.

HIGHLIGHTS

Population and Labor Force

South Carolina's population is expected to grow at a rate of 1.1 per cent annually from 1960 to 1975 in comparison with a rate of 1.3 per cent for the United States. The rate of growth for the population 14 years old and over for this period will be 1.7 per cent for both the State and the Nation. The labor force participation rate for the 14 years old and over population is expected to increase fractionally over the study period.

Industry Employment Trends

Total employment is projected to grow at a rate of 1.9 per cent per year from 1960 to 1975 in both the State and the Nation.

In 1960, for every 100 jobs in South Carolina's goods-producing industries, there were 80 jobs in service-producing industries. By 1975, for every 100 jobs in goods-producing industries 104 jobs are anticipated in service-producing industries.

Manufacturing in both the State and the Nation claimed 3 out of every 10 jobs in 1960. Projections to 1975 indicate that 2 out of every 10 jobs in the United States and 4 out of every 10 jobs in South Carolina will be in manufacturing. In South Carolina's manufacturing industries, the rate of growth is expected to slow down in the textile industry but expand rapidly elsewhere.

Occupational Employment Trends

In 1960, blue collar workers in South Carolina outnumbered white collar workers, while for the United States, white collar workers were the larger of the two groups. This relationship is expected to continue through 1975.

Substantial growth in employment from 1960 to 1975 is projected for the following occupational categories: professional, technical, and kindred workers; clerical and kindred workers; and craftsmen, foremen and kindred workers.

Moderate employment increases from 1960 to 1975 are projected for service workers; operatives and kindred workers; managers, officials, and proprietors; and sales workers.

A small employment gain is projected for laborers, excluding farm and mine, while a substantial decline is anticipated for farmers and farm workers.

For all of the broad occupational groups, the same trend will prevail from 1968 to 1975. The only exception is laborers, excluding farm and mine which will decline slightly.

Manpower Requirements

For every 100 new jobs created by industrial expansion 150 jobs will require replacement of workers because of deaths and retirements. This means that from 1968 to 1975 there will be 345,600 jobs to be filled. The occupational categories by volume of needs are listed in descending order:

Operatives and Kindred Workers
Service Workers
Clerical and Kindred Workers
Craftsmen, Foremen and Kindred Workers
Professional, Technical and Kindred Workers
Sales Workers
Managers, Officials, and Proprietors
Laborers, excluding Farm and Mine

Farmers and farm workers comprise the only major category with some replacement needs but a negative figure for expansion because of the declining trend in agricultural employment.

Manpower Resources

From 1960 to 1968, an average of some 38,000 workers were supplied annually for expansion and replacement needs. Projected needs indicate that for the period 1968-1975 some 49,000 new entrants to jobs will be required annually.

Not as many operatives and kindred workers; laborers, excluding farm and mine; and farmers and farm workers will be needed in the 1968-1975 period as were required in the 1960-1968 period.

On the other hand, for professional, technical and kindred workers, the projected need will be no greater during the 1968-1975 period than was experienced during the 1960-1968 period.

Finally, for managers, officials, and proprietors, clerical and kindred, sales, craftsmen, foremen and kindred, and service workers, the projected needs for 1968-1975 will be moderately greater than the experience of 1960-1968.

POPULATION AND LABOR FORCE

Population data are important factors in manpower projections. For this reason, a great deal of consideration is directed to these data. The U. S. Bureau of the Census produced four series of population projections for South Carolina to 1975. Since there is very little fluctuation in death rates, variation in these series is associated with birth rates and migration. Birth rates, however, affect only the population under 14 years of age in the projections; therefore, primary attention is directed to the group 14 years of age and over, because it determines the labor force for the State.

Table 1 shows selected population data for the United States and South Carolina and labor force participation rates for the population 14 years old and over. The annual rate of change for South Carolina's total population from 1950 to 1960 and for the projected period 1960-1975 is below the rate for the Nation. The State's population 14 years old and over is expected to increase by about 146,000 between 1965 and 1970 and some 137,000 during the period 1970-1975.

The participation rates for 1975 show an increase over past experience. The labor force projection for 1975, based on the assumption of a 4 per cent rate of unemployment (allowing for resident armed forces), indicates that increased labor force participation will be necessary to meet manpower requirements in the future. The rate derived by this method was nearly 60 per cent.

The population in the prime labor force ages, 18-44 years, comprises about one-half of the total labor force. This group is expected to continue to register steady increases through 1975. The age group 18-24, to which manpower resources are directed for higher education in technical schools and colleges, has increased very rapidly during the sixties. However, indications are that this age group will increase at a much slower rate after 1970 reflecting reductions in birth rates.

TABLE 1. TOTAL POPULATION IN SOUTH CAROLINA AND THE UNITED STATES AND LABOR FORCE PARTICIPATION RATES FOR THE POPULATION 14 YEARS OLD AND OVER 1950, 1960, 1965 AND PROJECTIONS TO 1975

	1950 (Census)	1960 (Census)	1965	1975	Annual Rate of Change 1950-1960	Annual Rate of Change 1960-1975
South Carolina						
Total Population [1]	2,117,027	2,382,594	2,550,000	2,815,000	1.2	1.1
Population 14 years and over	1,421,466	1,579,356	1,743,000	2,026,000	1.2	1.7
Labor force participation rate [2]	56.2	56.7	57.6	58.4	xxx	xxx
United States						
Total Population [1]	151,868,000	179,323,000	193,811,000	218,593,000	1.7	1.3
Population 14 years and over	113,035,000	126,277,000	137,491,000	161,854,000	1.1	1.7
Labor force participation rate [2]	56.9	55.3	56.2	57.6	xxx	xxx

[1] Population estimates for 1965-1975 were averaged from the four projection series presented in *Current Population Reports*, U. S. Bureau of the Census, Series P-25, No. 375 "Revised Projection of the Population of States: 1970 to 1985." Population estimates exclude armed forces overseas.

[2] U. S. Department of Labor, *Special Labor Force Report*, No. 74, "Labor Force Projections by State, 1970 and 1980." Participation rates for 1965 and 1975 are interpolated levels based on data from the above publication.

INDUSTRY EMPLOYMENT TRENDS

The industrial composition of South Carolina's labor force has undergone novel change in recent years primarily because of the increasing orientation of the economy toward technology. Every new breakthrough or innovation brings with it a need for higher standards of performance and more trained people. Paradoxically, the same forces which create new and expanding job opportunities also tend to create unemployment usually in the form of obsolete skills. Because there are no more "pools" of qualified labor, it is important that changing employment patterns be identified as soon as possible so solutions to the problems can be conceived and carried out. The objective is to minimize imbalances between labor demand and supply.

By separating total employment into two analytical groups, i.e., goods-producing and service-producing industries, it is apparent that significant shifts have occurred over time in the relative importance of the goods-producing and the service-producing industries. Table 2 illustrates these shifts.

TABLE 2. ESTIMATED EMPLOYMENT AND ANNUAL GROWTH RATES FOR GOODS-PRODUCING AND SERVICE-PRODUCING INDUSTRIES IN SOUTH CAROLINA, 1960, 1968, AND 1975

	Annual Average Employment			Annual Growth Rate Per Cent		Annual Growth Rate No. of Jobs	
	1960	1968	1975	1960-68	1968-75	1960-68	1968-75
Total, all industries	828,500	958,700	1,097,000	1.8	1.9	16,280	19,760
Goods-producing industries [1]	459,100	481,500	538,800	.6	1.6	2,800	8,186
Per cent of total	55.4	50.2	49.1				
Service-producing industries [2]	369,400	477,200	558,200	3.3	2.3	13,475	11,571
Per cent of total	44.6	49.8	50.9				

[1] Includes agriculture, forestry and fisheries; mining; contract construction; and manufacturing.
[2] Includes transportation, communication and public utilities; wholesale and retail trade; finance, insurance and real estate; services; and public administration.

Although both sectors are expanding, more growth is projected in service-producing than in goods-producing industries. For every 100 jobs in goods-producing industries in 1960, there were 80 jobs in service-producing industries. By 1975, this situation should change significantly; for every 100 jobs in goods-producing industries, 104 jobs are anticipated in the service-producing group. It should be pointed out that the annual growth in number of jobs in the goods-producing group for the period 1960-68 was heavily weighted by the reduction in agricultural jobs.

Employment projections to 1975 reflect more changes in the industrial composition of the economy. However, the results of these changes will not be the same for the State as for the Nation. Perhaps the most notable effect will be the shift in the relative importance of manufacturing which is expected to decline substantially at the national level but show a sharp increase in South Carolina. Similarly, employment in transportation, communication, and utilities is expected to decline in relative importance nationally but increase in South Carolina. Other areas of employment whose relative importance should increase both nationally and at the State level are construction; trade; finance, insurance and real estate; services; and public administration. In contrast, jobs in agriculture, forestry and fisheries in the years ahead are expected to account

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for a significantly smaller proportion of total employment both nationally and in South Carolina. The changes in per cent distribution are shown in Table 3.

TABLE 3. PER CENT DISTRIBUTION OF TOTAL EMPLOYMENT BY MAJOR INDUSTRY DIVISION IN THE UNITED STATES[1] AND SOUTH CAROLINA 1960 AND 1975

Industry	Per Cent Distribution			
	United States		South Carolina	
	1960	1975	1960	1975
Total, all industries	100.0	100.0	100.0	100.0
Agriculture, forestry & fisheries[2]	8.7	4.4	18.6	4.0
Mining	1.1	.7	.2	.2
Contract construction	6.1	6.4	5.8	7.8
Manufacturing	26.0	23.3	30.8	37.2
Transportation, comm. & public utilities	6.8	6.1	3.6	4.0
Wholesale & retail trade	20.0	20.8	14.9	15.9
Finance, insurance & real estate	4.3	4.5	2.8	3.3
Services	22.2	28.1	20.0	24.0
Public administration[3]	4.8	5.8	3.3	3.6

Note: Items may not add due to rounding.

[1] Employment estimates for the United States made by the U. S. Bureau of Labor Statistics published in *Tomorrow's Manpower Needs.*

[2] Includes farm production and agricultural services, forestry and fisheries.

[3] Government workers engaged in activities unique to government are classified as public administration. Those engaged in activities also carried on by private enterprises such as construction, manufacturing, transportation, etc., are classified in their appropriate industry.

The remainder of this section will be devoted to a comparison of the probable effects of technological changes on employment. The emphasis will be on the distribution and trends in major industries in the U. S. and South Carolina.

The growth in total employment is expected to coincide with the national average of 1.9 per cent per year. A number of divergent trends, however, are anticipated among the major industries, and these developments are presented in Table 4 on page 8. For additional detail see Appendix Table 1.

Agriculture, Forestry and Fisheries[1]

In 1960, agriculture accounted for nine out of every 100 jobs in the U. S. compared to 19 out of every 100 in South Carolina. By 1975, both nationally and in South Carolina only four out of every 100 jobs will be in agriculture. The downward trend in agricultural employment can be traced back nearly half a century and is due primarily to mechanization. Since World War II the output per farm worker has increased dramatically. While more of the same has been projected to 1975, it is evident that the rate of decline will be considerably greater in the State than in the Nation.

[1] Includes farm production and agricultural services, forestry and fisheries.

Mining

The mining industry in South Carolina employs fewer than 2,000 workers and is the smallest industry in the State. All of the employment is in mining and quarrying of nonmetallic minerals, except fuels, i.e., crushed and broken stone and clay. Unless new discoveries are made or some significant breakthrough in the utilization of existing resources is achieved, little change is anticipated through 1975.

Contract Construction

The contract construction division is comprised of three major industry groups: (1) general building (residential, industrial, commercial, and other buildings); (2) heavy construction (highways and streets, bridges, sewers, and other heavy construction); and (3) special trade contractors (plumbing and heating, masonry, carpentry, plastering, painting, and other special trades).

The proportion of construction employment to total employment is expected to rise steadily through 1975, and the rate of increase will be substantially greater in South Carolina than in the Nation. To illustrate, the average annual rate of growth between 1960 and 1975 has been placed at 2.2 per cent for the U. S. compared to 3.9 per cent for South Carolina. The pattern has already been set as a result of the business boom, especially in the South, which really gained momentum after 1961. Essentially, the same forces influencing national manpower requirements will be at work in the State, i.e., rising population and household formation, higher income levels (personal and business), increasing expenditures for highways and schools, and rising expenditures for new and expanding industrial facilities. Moreover, the development of new and improved construction materials and other technological innovations will have a marked influence on manpower.

TABLE 4. TOTAL EMPLOYMENT IN THE UNITED STATES AND SOUTH CAROLINA WITH ANNUAL GROWTH RATES FROM 1960 TO 1975
(In Thousands)

Industry	Employment				Annual Growth Rate 1960-1975	
	United States		South Carolina			
	1960	1975[1]	1960	1975	U.S.	S.C.
Total	66,681.0	88,660.0	828.5	1,097.0	1.9	1.9
Agriculture, Forestry & Fisheries[2]	5,816.0	3,875.0	154.0	44.3	—2.7	—8.0
Mining	723.0	640.0	1.7	1.9	— .8	.7
Contract Construction	4,068.0	5,675.0	47.9	85.1	2.2	3.9
Manufacturing	17,307.0	20,625.0	255.5	407.5	1.2	3.2
Durable Goods	9,749.0	11,995.0	54.2	122.2	1.4	5.6
Lumber and Wood Products	688.0	615.0	19.6	15.3	— .8	—1.7
Furniture and Fixtures	395.0	535.0	3.4	5.5	2.0	3.3
Stone, Clay and Glass Products	614.0	675.0	7.0	14.7	.6	5.1
Fabricated Metal and Ordnance	1,362.0	1,830.0	2.4	12.6	2.0	11.7
Nonelectrical Machinery	1,499.0	2,110.0	.6.7	21.3	2.3	8.0
Electrical Equipment and Supplies	1,465.0	2,035.0	3.6	23.9	2.2	13.5
Instruments and Related Products	403.0	540.0	1.0	4.2	2.0	10.0
Other Durable[3]	3,323.0	3,655.0	10.5	24.7	.6	5.9
Nondurable Goods	7,558.0	8,630.0	201.3	285.3	.9	2.4
Food and Kindred Products	1,813.0	1,710.0	11.8	14.5	— .4	1.4
Textile Mill Products	919.0	890.0	130.8	153.7	— .2	1.1
Apparel and Other Textile Products	1,241.0	1,550.0	30.6	61.0	1.5	4.7
Paper and Allied Products	597.0	790.0	8.1	15.3	1.9	4.3
Printing and Publishing	1,114.0	1,365.0	4.3	6.2	1.4	2.5
Chemicals and Allied Products	833.0	1,140.0	12.9	30.1	2.1	5.8
Other Nondurable[4]	1,041.0	1,185.0	2.8	4.5	.9	3.2
Transportation, Communication & Public Utilities	4,538.0	5,390.0	30.1	44.2	1.2	2.6
Wholesale and Retail Trade	13,365.0	18,455.0	124.0	174.0	2.1	2.2
Wholesale Trade	3,199.0	4,405.0	22.4	36.7	2.2	3.3
Retail Trade	10,166.0	14,050.0	101.1	137.6	2.2	2.1
Finance, Insurance and Real Estate	2,852.0	3,980.0	22.8	35.8	2.2	3.1
Services	14,794.0	24,880.0	165.7	264.0	3.5	3.2
Public Administration[5]	3,218.0	5,140.0	27.3	39.9	3.2	2.6

[1] Projections for the United States were prepared by the U. S. Department of Labor, Bureau of Labor Statistics, *Tomorrow's Manpower Needs* Bulletin # 1606.
[2] Includes farm production and agricultural services, forestry and fisheries.
[3] Includes primary metals; transportation equipment and miscellaneous manufacturing.
[4] Includes tobacco manufacturers; petroleum and coal products; rubber and plastic products; and leather and leather products.
[5] Government workers engaged in activities unique to government are classified as public administration; those engaged in activities also carried on by private enterprises such as construction, manufacturing, transportation, etc., are classified in their appropriate industry.

Moderate to substantial growth should occur in each of the three major construction groups, but the greatest gains in terms of jobs are expected in general building. In that area, residential construction is high on the list of primary activity followed by industrial and commercial building. By the same token, heavy construction should provide large numbers of jobs resulting from the long-range highway development program. This is expected to become an increasingly important factor influencing manpower requirements in the future as the emphasis slowly shifts from interstate highway construction to the development of the more complex and expensive urban transportation systems. Finally, good growth is anticipated in a wide range of special trades since they are linked, for the most part, directly to general building.

Manufacturing

Of the total number of workers in the United States and South Carolina in 1960, about 3 of every 10 were engaged in some type of manufacturing. However, indications are that the proportion of manufacturing employment to all employment nationally will decline to nearly 2 of every 10 by 1975 while in South Carolina the proportion will rise to almost 4 of every 10. (See Table 3). More than 150,000 new manufacturing jobs will be created in the State during the 15-year period placing manufacturing employment around 407,500.

In contrast to the balance reflected in the national manufacturing economy, textiles have been the dominant influence in South Carolina. Textile mills, predominantly broadwoven cotton, accounted for slightly more than half of all of the

State's manufacturing jobs in 1960. Although this industry is expected to continue to expand, due largely to the growing influence of synthetic fibers, the relative importance of textile jobs will decline sharply over the projection period. This is particularly true at the national level where no growth is expected in the industry. (See Table 3). A slowing down in the rate of growth in textiles accompanied by rapid expansion elsewhere in manufacturing is creating greater diversification. Appliances, batteries, capacitors, gears, tools and TV dinners are but a few of the relatively new products produced in this State, and greater diversification is expected over the next few years. Consequently, tremendous pressure will be exerted on the economy as producers of apparel, chemicals, electrical and nonelectrical machinery, fabricated metals, transportation equipment and a host of others compete for available manpower. Here again, we see the effects of essentially the same technological developments and innovations which have influenced and will continue to influence manufacturing employment nationally, i.e., new processing methods, more sophisticated and improved machinery, more efficient materials handling, new and improved raw materials for product development, instrumentation and automatic controls, and increased use of electronic computers for improved communications, market development, inventory control and other uses too numerous to mention.

Transportation, Communication and Public Utilities

Some 30,000 workers were employed in the State's transportation, communication and public utilities industry division in 1960. Almost one-half were in transportation and the remainder in communication and utilities. Despite the fact that most of the industries in the transportation, communication and public utilities division were expanding at the time, the overall division employment had been declining for years because of railroads. During the early sixties, railroad employment began to stabilize. It is believed that steady growth in trucking, communication, and utilities — resulting from population increases and an expanding economic base—will produce a gain of around 14,000 workers by 1975.

Wholesale and Retail Trade

Nearly 125,000 employees were on payrolls of wholesale and retail trade establishments in 1960. Commensurate with the rising population, per capita income, and consumer expenditures, trade employment will likely expand to nearly 175,000 by 1975. Compared to national trends, retail trade is expected to rise at about the same rate annually, as measured from 1960 to 1975, but wholesale trade should increase somewhat faster in South Carolina.

In the wholesale sector, good growth is expected in motor vehicle equipment, electrical goods, and machinery, equipment and supplies due largely to the rapid expansion and diversification of the State's manufacturing base. On the other hand, very little increase is anticipated in drugs and chemicals, dry goods and apparel, and grocery and related products due to improved packaging and transportation, more efficient ordering and inventory controls, and increased use of labor-saving innovations such as automatically controlled conveyors for moving and handling goods in storage.

Manpower requirements in the retail sector will vary widely, but most of the demand will be centered in general merchandise, 5 and 10 cent stores, food stores, and restaurants. Moderate expansion should occur in automotive dealers and gasoline service stations, apparel and accessories stores, and furniture stores. The continuing population shift from rural to urban areas and from cities to suburban areas, where in large shopping centers there is a marked trend toward longer store hours, will be important factors affecting manpower.

Finance, Insurance and Real Estate

Employment in finance, insurance and real estate should increase from 22,800 in 1960 to 35,800 in 1975—a gain of more than 50 per cent over the entire period or 3.1 per cent per year. This is substantially above the expected annual rate of growth nationally.

Of the total number employed in finance, insurance, and real estate in 1960, about one-half were in insurance; nearly one-third in finance; and the remainder in real estate. By 1975, however, these proportions should have changed significantly as employment in finance is expected to more than double, while the insurance group should rise by hardly more than 10 per cent. As evidence of the increase in population

and personal income, the number and dollar value of bank checking accounts has been rising steadily over the last several years. At the same time, consumer credit reporting has been growing very rapidly in commercial banks. Savings and loan associations also have been expanding and this has had a marked influence on the increase in construction activity particularly in home building.

Although manpower requirements in the banking and insurance industries have already been greatly reduced by the increasing use of computers and related equipment used in clerical operations, these innovations are expected to be more of a limiting factor on employment nationally than in South Carolina. This is due in part to the more advanced and widespread use of such labor-saving devices nationally.

Services

The services division, representing the second largest industry division in the State, employed some 166,000 workers in 1960 and is expected to provide jobs for about 264,000 in 1975. The average annual rate of increase to 1975 is expected to be fractionally higher for the United States than for the State.

In contrast to other sectors of the economy, technological developments should not seriously limit employment growth in service industries due largely to the industrial composition (large numbers of relatively small firms) and the nature of the work performed (person-to-person) by service establishments. Some clerical functions are sure to be affected, however, by computers and related equipment as these services become more readily available to small businesses on a contract basis. The major factors which will contribute either directly or indirectly to the rapid expansion in services are rising population, rising incomes, and the increase in leisure time made possible through technology.

Commensurate with national trends, moderate to substantial job expansion is anticipated in educational services as school attendance increases at all levels of learning except elementary. As indicated earlier, detailed industry data are presented in Appendix Table 1. Moreover, medical and other health services are expected to double between 1960 and 1975. Less spectacular perhaps but equally significant is the anticipated expansion in hotels and motels; personal service (beauty shops, funeral service, etc.); business services (advertising, consumer credit, etc.); auto repair; entertainment; legal and other professional services.

Public Administration[2]

Employment in public administration at the Federal, State, and local level should increase from around 27,000 in 1960 to nearly 40,000 in 1975. Although the public administration sectors at the state and local levels show moderate to substantial growth through 1975, most of the expansion will be in Federal public administration other than post offices.

To highlight the timing and extent of recent industrial development in South Carolina, employment in each of the State's major industries is presented in Table 5 for 1960 and 1968 along with projections to 1975. In addition, the annual rate of growth in per cent and number of jobs from 1960-1968 and 1968-1975 is shown. Over both comparison periods, manufacturing, services, trade and construction, in that order, lead the advance in the formation of new jobs. Only two industries, agriculture and lumber manufacturing, are expected to decline through 1975.

[2] Government workers engaged in activities unique to government are classified as public administration; those engaged in activities also carried on by private enterprises, such as construction, manufacturing, transportation, etc., are classified in their appropriate industry.

TABLE 5. TOTAL EMPLOYMENT IN SOUTH CAROLINA BY MAJOR INDUSTRY 1960, 1968, AND PROJECTIONS TO 1975 WITH ANNUAL GROWTH RATES FROM 1960-1968 AND 1968-1975 (In Thousands)

Industry	Employment Annual Average			Annual Growth Rates			
				1960-1968		1968-1975	
	1960	1968	1975	Per Cent	No. of Jobs	Per Cent	No. of Jobs
Total	828,500	958,700	1,097,000	1.8	16,300	1.9	19,800
Agriculture, Forestry, & Fisheries[1]	154,000	75,900	44,300	— 8.5	— 9,800	—7.4	— 4,500
Mining	1,700	1,600	1,900	— .8	*	2.5	*
Contract Construction	47,900	65,300	85,100	3.9	200	3.9	2,800
Manufacturing	255,500	338,700	407,500	3.6	10,400	2.7	9,800
Durable Goods	54,200	90,900	122,200	6.7	4,500	4.3	4,400
Lumber and Wood Products	19,600	16,700	15,300	— 2.0	— 400	—1.2	— 200
Furniture and Fixtures	3,400	4,500	5,500	3.6	100	2.9	100
Stone, Clay, & Glass Products	7,000	11,400	14,700	6.3	600	3.7	500
Fabricated Metal and Ordnance	2,400	8,100	12,600	16.4	700	6.5	600
Nonelectrical Machinery	6,700	14,600	21,300	10.2	1,000	5.5	1,000
Electrical Equipment & Supplies	3,600	12,500	23,900	16.8	1,100	9.7	1,600
Instruments & Related Products	1,000	2,900	4,200	14.2	200	5.4	200
Other Durable[2]	10,500	20,200	24,700	8.5	1,200	2.9	600
Nondurable Goods	201,300	247,800	285,300	2.6	5,700	2.0	5,300
Food and Kindred Products	11,800	14,200	14,500	2.3	300	.3	*
Textile Mill Products	130,800	148,500	153,700	1.6	2,200	.5	700
Apparel & Other Textile Products	30,600	41,700	61,000	3.9	1,400	5.6	2,800
Paper and Allied Products	8,100	10,800	15,300	3.7	300	5.1	600
Printing and Publishing	4,300	5,300	6,200	2.6	100	2.3	100
Chemicals and Allied Products	12,900	23,400	30,100	7.7	1,300	3.7	1,000
Other Nondurable Goods[3]	2,800	3,900	4,500	4.2	100	2.1	100
Transportation, Communication, and Public Utilities	30,100	40,000	44,200	3.6	1,200	1.4	600
Wholesale and Retail Trade	123,500	151,400	174,300	2.5	3,400	2.0	3,300
Wholesale Trade	22,400	29,200	36,700	3.4	800	3.3	1,100
Retail Trade	101,100	122,200	137,600	2.4	2,600	1.7	2,200
Finance, Insurance, & Real Estate	22,800	28,100	35,800	2.6	700	3.5	1,100
Services	165,700	223,100	264,000	3.8	7,200	2.4	5,800
Public Administration[4]	27,300	34,600	39,900	3.0	900	2.1	800

*Less than 100.

[1] Includes farm products.

[2] Includes primary metals, transportation equipment and miscellaneous manufacturing.

[3] Includes tobacco manufacturers, petroleum and coal products, rubber and plastic products, and leather and leather products.

[4] Government workers engaged in activities unique to government are classified as public administration; those engaged in activities also carried on by private enterprises, such as construction, manufacturing, transportation, etc., are classified in their appropriate industry.

OCCUPATIONAL EMPLOYMENT TRENDS

As indicated in the introduction to this study, the occupational structure of South Carolina's labor force has been changing during the past three decades and is expected to change even more from 1960 to 1975. However, the pattern of change in South Carolina will be unlike that for the Nation. The factors principally causing shifts in the occupational structure are: (1) continuing industrialization with greater diversification, (2) demand for services increasing faster than the demand for goods, and (3) the impact of technological changes in reducing worker requirements per unit of output. This last factor should have a greater influence on farm and blue collar workers than on white collar and service workers.

While for the State as a whole, blue collar workers outnumber white collar workers, the reverse is found nationally. The occupational projections to 1975 indicate an increase in the white collar and service groups both at the State and national level. In contrast to the United States trend, the proportion of blue collar workers is expected to grow in South Carolina. This divergent trend reflects the fact that the relative importance of manufacturing is increasing in the State but decreasing in the Nation. The biggest shift in occupational employment will continue to be from farm to nonfarm jobs. A comparison of the trends in white collar, blue collar, service and farm workers is presented in Table 6.

The following analysis of broad occupational groups and subgroups is intended to highlight the major occupational developments in South Carolina over the study period. For the State as a whole, all occupations are expected to increase by some 36 per cent for the period 1960-1975 and about 14 per cent over the 1968-1975 period. In 1975 professional, technical and kindred workers; clerical and kindred workers; craftsmen, foremen, and kindred workers; and

TABLE 6. PER CENT DISTRIBUTION OF EMPLOYMENT 14 YEARS OF AGE AND OLDER BY BROAD OCCUPATIONAL CATEGORIES IN SOUTH CAROLINA AND THE UNITED STATES, 1960 AND 1975

Occupational Category	Percentage Distribution			
	U. S.[1]		S. C.	
	1960	1975	1960	1975
All Occupations	100	100	100	100
White Collar Workers[2]	43	49	31	37
Blue Collar Workers[3]	37	34	44	47
Service Workers	12	14	13	14
Farm Workers	8	4	12	2

[1] *USDL, BLS, Bulletin No. 1599, Occupational Employment Patterns For 1960 and 1975.*
[2] Includes professional, technical, managers, officials and proprietors, clerical workers, and sales workers.
[3] Includes craftsmen and foremen, operatives, and nonfarm laborers.

service workers will constitute a larger percentage of all workers, while managers, officials, and proprietors and sales workers will maintain their relative positions. Operatives and kindred workers will increase in relative importance in comparison with 1960 but will decrease from 1968 to 1975. Laborers (excluding farm and mine), and farmers and farm workers all will decline in relative importance over the study period. Nevertheless, operatives and kindred workers will continue to represent the largest occupation[illegible] group in the State because of the predominance of the textile industry. The experienced and projected developments for major occupational groups are presented in Table 7 and Chart 1. For additional detail on occupations, see Appendix Table 2.

Professional, Technical and Kindred Workers

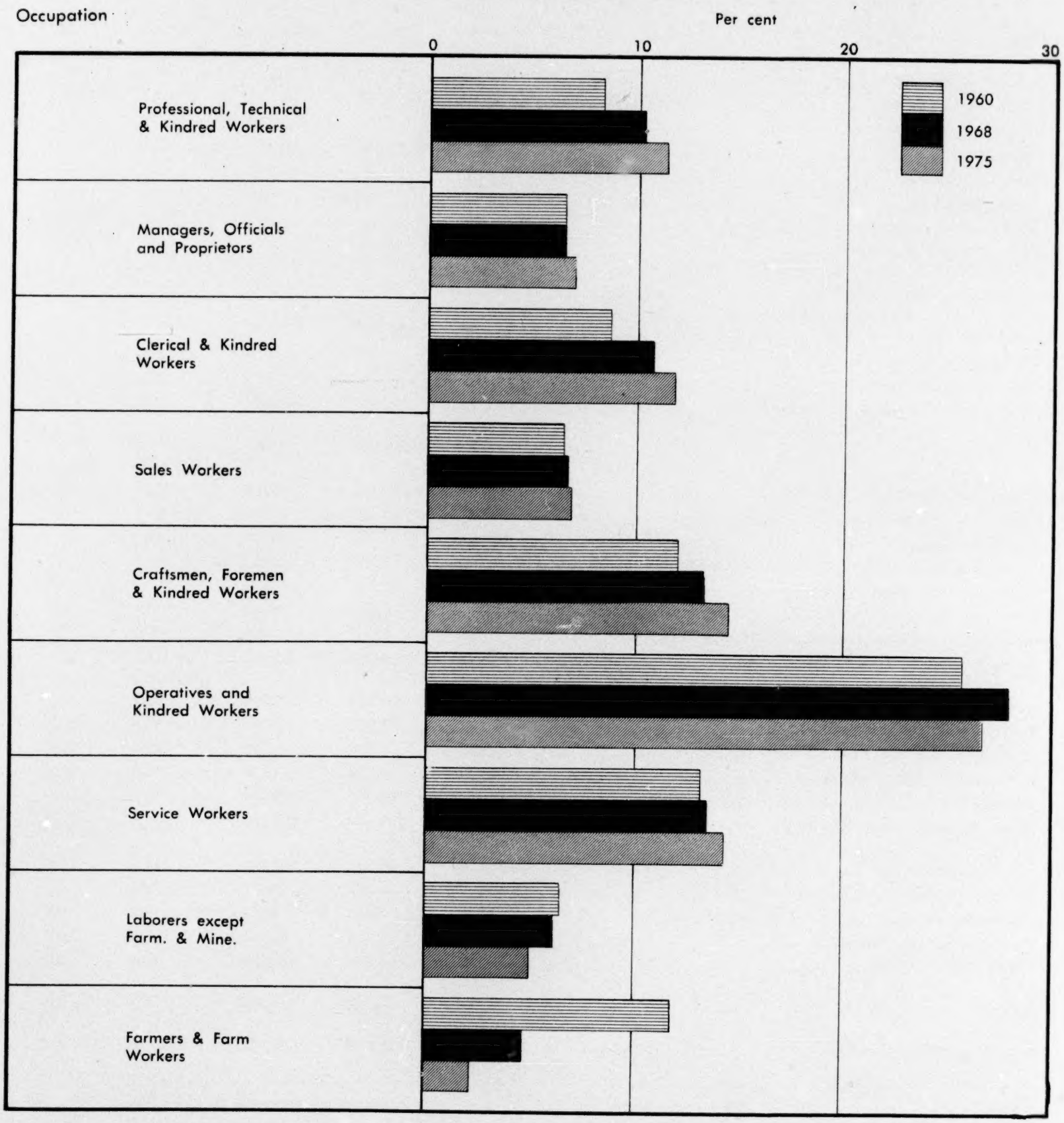
Professional, technical and kindred workers will represent the fastest growing broad occupational group from 1960 to 1975. Employment is projected to reach almost 122,000 in 1975—up 83 per cent above the 1960 level and nearly 24 per cent above the number working in 1968. From 1960 to 1975, professional and technical

TABLE 7. TOTAL EMPLOYMENT BY OCCUPATIONAL GROUP IN SOUTH CAROLINA 1960, 1968, AND PROJECTIONS TO 1975 WITH PERCENTAGE CHANGES FROM 1960-1975 AND 1968-1975

Occupational Group	Employment			Percent Change	
	1960	1968	1975	1960-1975	1968-1975
Totals	803,730 [1]	958,700	1,097,000	36.5	14.4
Professional, Technical, and Kindred	66,860	98,560	121,910	82.6	23.7
Engineers, Technical	4,760	9,600	16,170	239.7	91.1
Medical and Other Health Workers	12,210	17,110	20,510	68.0	19.9
Teachers	25,530	34,590	33,900	32.8	— 2.0
Natural Scientists	1,120	1,740	2,900	158.9	66.7
Social Scientists	100	180	240	140.0	33.3
Technicians Except Medical and Dental	3,680	6,780	11,520	213.0	69.9
Other Professional, Technical, and Kindred	19,460	28,560	36,670	88.4	28.4
Managers, Officials, Proprietors	53,490	63,800	75,790	41.7	18.8
Clerical and Kindred Workers	74,040	101,390	128,560	73.6	26.8
Stenographers, Typists, Secretaries	18,260	26,580	34,810	90.6	31.0
Office Machine Operators	1,410	2,020	3,110	120.6	54.0
Other Clerical & Kindred Workers	54,370	72,790	90,640	66.7	24.5
Sales Workers	52,880	63,950	74,240	40.4	16.1
Craftsmen, Foremen and Kindred	96,790	128,030	158,910	64.2	24.1
Construction Craftsmen	32,900	42,760	48,890	48.6	14.3
Foremen, n.e.c.	14,330	19,140	26,440	84.5	38.1
Metalworking, excluding Mechanics Craftsmen	6,180	9,940	12,450	101.5	25.3
Mechanics and Repairmen	22,270	30,440	41,38[illegible]	85.9	26.0
Printing Trades Craftsmen	1,700	2,090	2,250	32.4	6.7
Transportation, Public Utility Craftsmen	3,270	4,650	5,460	67.0	16.4
Other Craftsmen & Kindred	16,140	19,010	22,030	36.5	15.9
Operatives and Kindred Workers	206,590	268,780	299,990	45.2	11.6
Drivers and Deliverymen	28,230	37,020	45,990	62.9	24.2
Transportation and Public Utility Operators	1,230	1,380	1,540	25.2	11.6
Semi-skilled Metalworkers	5,020	11,820	15,150	201.8	28.2
Semi-skilled Textile Occupations	43,980	56,070	52,450	19.3	— 6.5
Other Operatives and Kindred	128,130	162,490	184,860	44.3	13.7
Service Workers	105,890	128,820	156,400	47.7	21.4
Private Household Workers	52,010	56,970	62,200	19.6	9.3
Protective Service	6,260	7,380	8,070	28.9	9.3
Food Service Workers	15,390	21,220	25,400	65.0	19.7
Other Service Workers	32,230	43,250	60,730	88.4	40.4
Laborers except Farm and Mine	52,210	59,680	55,820	6.9	— 6.4
Farmers and Farm Workers	94,980	45,730	25,380	—73.3	—44.5

[1] This figure represents the April 1960 census count and differs from total employment referred to elsewhere in this study which is calculated on an annual average basis. Source: Appendix Table 2.

CHART 1
BROAD OCCUPATIONAL GROUPS AS A PER CENT OF TOTAL EMPLOYMENT
IN SOUTH CAROLINA
1960, 1968 AND PROJECTIONS TO 1975



workers are expected to increase their share of total employment in the State from about 8 to 11 per cent.

A sharp increase in professional and technical manpower in medical and other health occupations is anticipated over the study period. Future requirements reflect shortages which have existed for a number of years. Moreover, expansion of medical services to the aged through Medicare and Medicaid, growing per capita incomes, and general awareness of the importance of health care will also be significant factors in creating job opportunities. Professional nursing occupations, physicians and surgeons, and medical and dental technicians should increase significantly, but the number of dentists will not rise as sharply as other medical occupations.

While all but a few occupations within the professional and technical group show projected increases greater than the average for all occupations, engineers, natural scientists, and related technician occupations should be among the fastest growing groups. The rapid growth in these occupations reflects the continuing expansion and diversification of manufacturing in recent years. In manufacturing there have been many technological changes which have resulted in more complex products and processes. This tends to reduce the number of blue collar workers required but increase the need for the higher skilled engineers, scientists, and technicians.

Employment requirements for teachers were projected to increase nearly 33 per cent from 1960 to 1975 but ease down slightly below the number employed in 1968. The number of elementary and secondary teachers will increase a little more than one-fourth above the 1960 level. The increase from 1960 to 1975 and decline from 1968, which will be in elementary teachers, reflect the slow-down in birth rates beginning in the late 1950's following the high rates which prevailed after World War II. There are a number of factors influencing the need for teachers other than birth rates. These are high pupil retention rates at the elementary level, proposed reduction in the teacher-pupil ratio, and proposed statewide kindergarten programs. However, the effects of these developments are so long-ranged that it is difficult, if not impossible, to determine their influence through the terminal year of the study period.

Requirements for college teachers will nearly double from 1960 to 1975 as both the number of students graduating from high school and the number going on to college increase. Teachers grouped as "other" are those employed in privately operated commercial and technical schools, military training programs, poverty programs, corporate training programs, and in other activities. Employment in this "other" group is expected to rise by more than 50 per cent from 1960 to 1975. Despite the growth in secondary and college and "other" teachers, the loss in elementary teachers will adversely affect the relative position to total employment. The change from 1960 to 1975 will be from 3.2 to 3.1, while nationally it is from 2.5 to 3.5 per cent of total employment.

The other professional, technical and kindred workers group consists of a variety of occupations such as accountants and auditors, architects, clergymen, lawyers and judges, personnel relations, social and welfare workers, workers in art and entertainment, and a residual group not elsewhere classified. Increases projected for these occupations place the 1975 requirements 88 per cent above 1960 and 28 per cent above the number employed in 1968. The occupations clustered in this "other" group account for a significant proportion of professional and technical jobs with only jobs for teachers comparable in number. In 1960, 2.4 per cent of total employment was in the occupational group identified as other professional, technical and kindred workers, 3.0 per cent in 1968, and 3.3 per cent expected in 1975. The most substantial percentage increase will be for architects, designers (excluding design draftsmen), personnel-labor relations, and the residual group n.e.c. This last group is expected to be nearly three times as large in 1975 as in 1960, with an addition of nearly 7,800 jobs. The rapid growth in the residual group is due to demand for programmers and analysts resulting from increasing use of electronic computers. Computer programmers and systems analysts are included in this group.

Managers, Officials and Proprietors

The number of managers, officials, and proprietors is expected to increase by more than 40

per cent from 1960 to 1975. The rate of growth will be somewhat higher than the comparable national rate. To a large extent the increasing number of managers, officials and proprietors reflects the diversification and specialization in the State's economy. The trend in the trade and service sectors is toward larger establishments, and this will likely reduce the need for proprietors since they are usually associated with small firms. As implied above, however, the number of managers and officials is expected to grow with industrial expansion in the State.

Clerical Workers

The addition of some 54,500 clerical jobs by 1975 will place the clerical and kindred worker occupational group as the second fastest growing in the State. The expected growth represents a 74 per cent increase over 1960 and a 27 per cent increase over the number employed in 1968. The increasing use of electronic computers and technological changes in other office machines have not slowed the growth in employment of clerical workers although expansion in some occupations such as accounting clerks and bookkeepers has been dampened. The demand for more analytical reports by management, the increasing complexity of business establishments, and the anticipated expansion in state and local government will offset reductions caused by technological advances. The net effect of these developments will be a gain in clerical employment over the study period.

Sales Workers

Requirements for sales workers should increase about 40 per cent from 1960 to 1975, a slightly higher growth rate than for total employment. The expansion in sales workers is comparable to that in wholesale and retail trade where most sales workers are employed. The trend toward self-service in retail stores may tend to reduce the number of sales workers in retail trade, while on the other hand, their use in manufacturing industries is expected to increase.

Craftsmen, Foremen and Kindred

Craftsmen, foremen, and kindred workers, the broad occupational group of skilled workers, is expected to grow faster than total employment, and contrary to the national trend, account for a larger proportion of total employment. The projected addition of more than 62,000 jobs from 1960 to 1975 will change the percentage of total employment in this skill group from 12.0 to 14.5. The level of about 159,000 expected in 1975 is nearly 25 per cent above the number employed in 1968.

The growth in metal working occupations and mechanics and repairmen reflects a number of developments in the State's economy—new industries, particularly durable goods; increased mechanization and automation; and growth in personal income which translate into electrical appliances, automobiles, and other conveniences requiring maintenance and repair. Continuing highway construction and expansion in residential, industrial, and commercial building will increase the demand in skilled construction trades.

More workers will be needed for expansion in transportation, communication, and public utilities, but those jobs connected with railroad transportation are not among the growth occupations.

Operatives and Kindred Workers

Nationally, operatives and kindred workers became the largest broad occupational group in 1940, but not until 1960 did this group surpass farm workers as the largest occupational group in the State. Substantial growth is expected at both the national and State level, but the relative proportion of total employment nationally will decline, while the share of total employment in South Carolina will increase slightly from 1960 to 1975 but decline from 1968 to 1975. Technological changes have tended to reduce the need for operatives and kindred workers, and this trend should continue through the study period.

Many of the occupations involving machine tending and operation, particularly in the textile industry, are found in this group. As shown in Table 3, semi-skilled textile occupations will be among the slowest growing, with a projected increase of only 19.3 per cent from 1960 to 1975. Declining employment projected from 1968 to 1975 for semi-skilled textile occupations will place the relative position of employment in this group to employment in all occupations at 4.8 per cent as compared to 5.5 per cent in 1960. For occupational detail, see Appendix Table 2.

Service Workers

Requirements for service workers will exert pressure on the economy through 1975. Almost all of the service occupations will show moderate to substantial growth, especially those in food service, janitors and sextons, and practical nurses as a result of a growing population and expanding incomes. Private household workers, which accounted for nearly one-half of all service workers in 1960, will gain very little through 1975.

Laborers, excluding farm and mine

Laborers, excluding farm and mine, will continue to be significantly affected by mechanization and automation. A slight increase in employment over 1960 is projected, but the long-range forecast reflects a decline from the level in 1968 when considerable highway construction was in progress.

Farmers and Farm Workers

The rapid decline in farm workers is expected to continue, as mechanization and technology increase the productivity of farm workers. The projected drop in their share of total employment from almost 12 per cent in 1960 to just over 2 per cent in 1975 is indicative of the sharp decline in recent years.

MANPOWER REQUIREMENTS

Up to this point, this study has dealt with measurements of employment levels over time, or industrial expansion. Jobs added to the economy tell only half the story. Jobs vacated by deaths and retirements also create demands for manpower. Even though the total number of jobs in an occupation may not change, requirements for replacement purposes can be substantial. In this State, during the 1968-1975 forecast period, for every 100 new jobs, 150 existing jobs will require replacement of workers permanently withdrawing from the occupation. For some occupations, replacement needs are twice as great as expansion needs.

TABLE 8. DEMAND FOR EXPANSION AND REPLACEMENT BY OCCUPATIONAL GROUP IN SOUTH CAROLINA FOR THE PERIOD 1968-1975

Occupation	Expansion Needs	Replacement Needs	Total Demand for Workers
Totals	138,360	207,250	345,610
Professional, Technical and Kindred	23,350	22,790	46,140
Engineers, Technical	6,570	1,170	7,740
Medical and Other Health Workers	3,400	4,830	8,230
Teachers	−690	9,350	8,660
Natural Scientists	1,160	180	1,340
Social Scientists	60	20	80
Technicians except Medical and Dental	4,740	1,090	5,830
Other Professional, Technical and Kindred	8,110	6,150	14,260
Managers, Officials, Proprietors	11,990	12,150	24,140
Clerical and Kindred Workers	27,170	31,700	58,870
Stenographers, Typists, Secretaries	8,230	10,770	19,000
Office Machine Operators	1,090	680	1,770
Other Clerical and Kindred	17,850	20,250	38,100
Sales Workers	10,290	14,560	24,850
Craftsmen, Foremen and Kindred	30,880	19,040	49,920
Construction Craftsmen	6,130	6,430	12,560
Foremen, n.e.c.	7,300	3,270	10,570
Metalworking, excluding Mechanics Craftsmen	2,510	1,470	3,980
Mechanics and Repairmen	10,950	4,500	15,450
Printing Trades Craftsmen	160	320	480
Transportation, Public Utility Craftsmen	810	440	1,250
Other Craftsmen and Kindred	3,020	2,610	5,630
Operatives and Kindred Workers	31,310	48,150	79,460
Drivers and Deliverymen	8,970	3,720	12,690
Semi-skilled Metalworkers	3,430	1,610	5,040
Transportation and Public Utility Operators	160	200	360
Semi-skilled Textile Occupations	−3,620	13,730	10,110
Other Operatives and Kindred	22,370	28,880	51,250
Service Workers	27,580	45,800	73,380
Private Household Workers	5,230	23,590	28,820
Protective Service	690	1,590	2,280
Food Service Workers	4,180	6,200	10,380
Other Service Workers	17,480	14,420	31,900
Laborers except Farm and Mine	−3,860	7,360	3,500
Farmers and Farm Workers	−20,350	5,700	−14,650

Source: Appendix Table 3

As shown in Table 8 only two major occupational groups will require more workers for expansion than for replacement. In the professional, technical, and kindred group, more than half of the total demand will be for expansion purposes. The medical and other health group will need more workers for replacement than for expansion. This is due, in part, to the large proportion of women in this group who typically experience higher labor turnover than men. Teachers make the greatest departure from the pattern of the professional group inasmuch as demands for expansion are expected to recede while replacement needs remain significant. As indicated in the previous chapter, the decline in teacher employment will be centered at the elementary level and numerically will offset expansion needs at higher levels of education.

Craftsmen, foremen, and kindred workers comprise the other major occupational group in which expansion demands exceed replacement needs. Most of the component occupations of the group follow the same pattern. Expansion needs for foremen, n. e. c.; metal working craftsmen; mechanics and repairmen and transportation and public utilities craftsmen were nearly twice as great as replacement needs.

Replacement needs are expected to be considerably higher than expansion needs in the managers, officials, and proprietors; clerical and kindred workers; sales workers; operatives; and service workers groups. Among the occupations in these major groups, only textile operatives reflected demand entirely for replacement purposes.

The number of jobs for laborers, excluding farm and mine, and farmers and farm workers will continue to shrink but there will be some opportunities for employment for replacements.

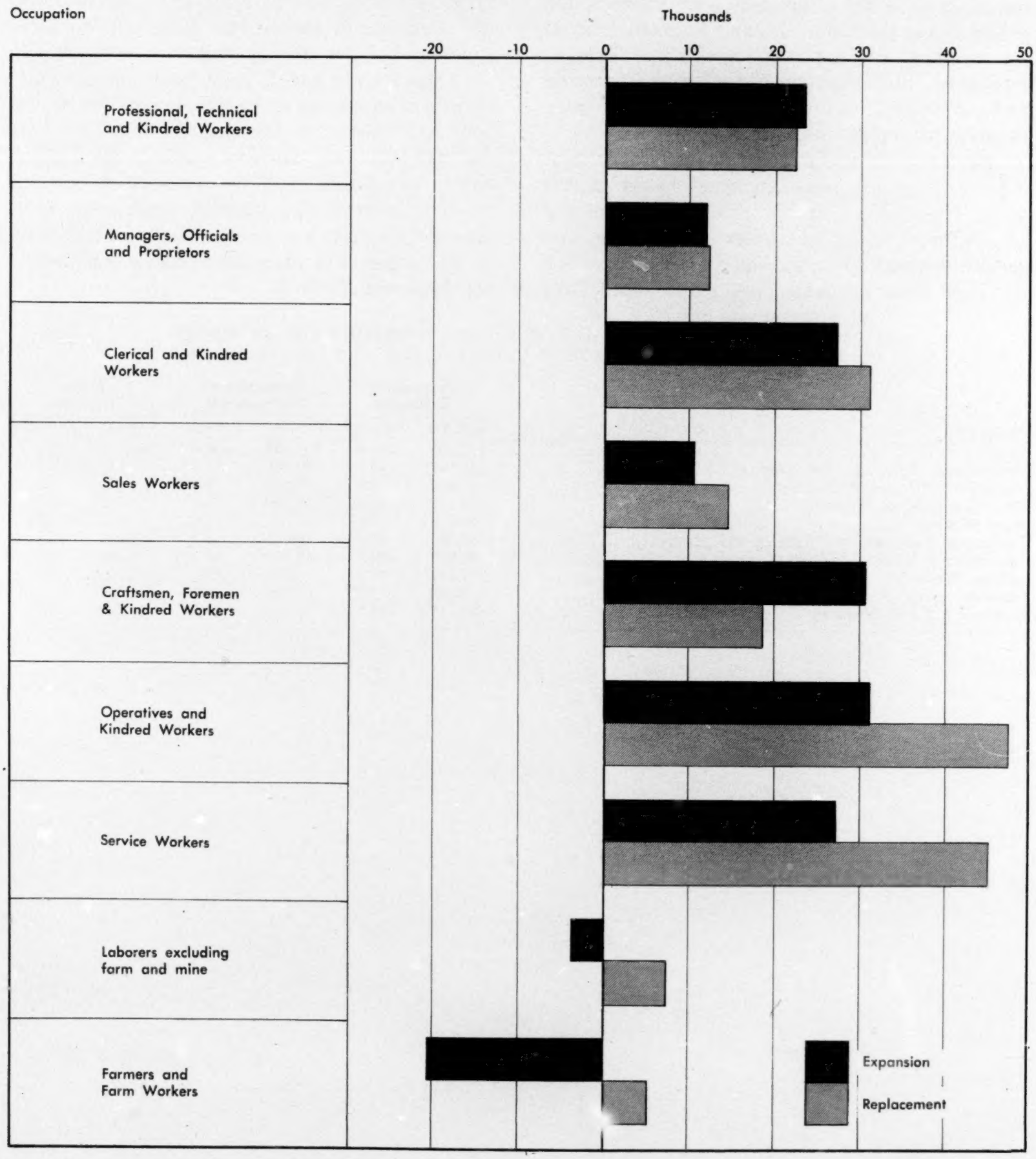
Table 9 and Chart 2 show the combined effect on jobs of expansion and replacements for deaths and retirement for the period 1968-1975. Of the 345,000 new workers needed, the largest single proportion will be operatives, service workers, clerical and kindred, craftsmen, foremen and kindred, and professional and technical, in that order. For more detail on all occupations see Appendix Table 3.

TABLE 9. TOTAL DEMAND AND PER CENT DISTRIBUTION BY BROAD OCCUPATION IN SOUTH CAROLINA FOR THE PERIOD 1968-1975

Occupation	Demand for Expansion		Demand for Replacements		Total Demand	
	Number	Per cent	Number	Per cent	Number	Per cent
Total	138,260	100.0	207,250	100.0	345,510	100.0
Professional, Technical, and Kindred	23,350	16.9	22,790	11.0	46,140	13.4
Managers, Officials, & Proprietors	11,990	8.7	12,150	5.9	24,140	7.0
Clerical & Kindred Workers	27,170	19.6	31,700	15.3	58,870	17.0
Sales Workers	10,290	7.4	14,560	7.0	24,850	7.2
Craftsmen, Foremen, and Kindred	30,880	22.3	19,040	9.2	49,920	14.4
Operatives & Kindred Workers	31,210	22.6	48,150	23.2	79,360	23.0
Service Workers	27,580	19.9	45,800	22.1	73,380	21.2
Laborers, except Farm & Mine	— 3,860	— 2.8	7,360	3.6	3,500	1.0
Farmers & Farm Workers	—20,350	—14.7	5,700	2.8	—14,650	— 4.2

CHART 2

EXPANSION AND REPLACEMENT DEMAND BY BROAD OCCUPATIONAL GROUPS IN SOUTH CAROLINA FOR THE PERIOD 1968-1975



MANPOWER RESOURCES

The preceding chapters of this study have been devoted to forecasting manpower requirements. For effective program planning and evaluation, it is important to give some consideration to manpower resources. This chapter is devoted to an appraisal of the adequacy of supply in broad occupational groups and selected subgroups in South Carolina.

Sources for workers entering an occupation include training programs, armed forces, other occupations, immigrants, in-migration from other areas, and new and re-entrants to the labor force. On the other hand, workers may leave an occupation because of death, retirement, occupational transfers, emigration, outmigration to other areas, and withdrawal from the labor force for marriage, birth of children and other reasons. The job market is highly dynamic. Unfortunately, the measurement of projected labor supply is not as advanced as the projection of labor demand. Except for the limitations imposed through hiring requirements, workers are relatively free to make occupational choices and to move from one job to another and from one area to another. While this may be desirable for workers it tends to make the measurement of labor supply especially difficult.

As in the case of manpower demand, there are a number of ways to forecast manpower supply, but selection of a method depends upon the availability of technical staff, the desired volume and precision of the estimates, and the time and resources available for the work. The approach selected for South Carolina was simple, inexpensive, and fast. For these advantages, some precision was sacrificed.

The technique involves a comparison of the annual number of workers entering an occupation over a recent period with a projection of the number that will be required annually in a future period for employment expansion and replacement. As such, these measures indicate whether the current rate of new worker input to an occupation must be expanded, contracted, or maintained at about the current level in order to meet future needs. Therefore, these measures do not take into account the total supply of workers.

To achieve the occupational growth experienced in South Carolina from 1960 to 1968 an average of some 38,000 workers were supplied annually for expansion and replacement needs. The projected required new entrants from 1968 to 1975 for expansion and replacement amount to a little more than 49,000 each year.

All of the broad occupational groups and selected subgroups are presented in Table 10. For analytical purposes, the ratio of the projected required new job entrants for the period 1968-1975 to the experienced need during the 1960-1968 period is presented in the same table. For some occupations based on the projections, not as many workers will be needed in the period 1968-1975 as were required in the period 1960-1968. These are identified by ratios less than unity (1.0). On the other hand, for some occupations the projected need in the period 1968-1975 will be greater than that in the period 1960-1968. These are identified by ratios greater than unity. Finally, for some occupations the projected need in the period 1968-1975 will approximate that of the 1960-1968 period, and these are identified by ratios of unity or near unity.

Therefore, the ratios only serve to point out possible imbalances in certain occupations. More detailed information on workers entering occupations during the period 1960-1968 and the projected number that will be required during the period 1968-1975 is presented in Appendix Table 4.

TABLE 10. ESTIMATED AVERAGE ANNUAL NEW JOB ENTRANTS EXPERIENCED FROM 1960-1968 AND PROJECTED REQUIRED FROM 1968-1975 BY BROAD OCCUPATIONAL CATEGORIES AND SELECTED SUBGROUPS IN SOUTH CAROLINA

Occupation	Annual Average New Job Entrants[1]		
	Experienced Need	Projected Required	Ratio of Projected Required To Experienced Need
Professional, Technical & Kindred	6,550	6,590	1.01
Engineers, Technical	700	1,110	1.59
Medical & Other Health Workers	1,150	1,180	1.03
Teachers	2,320	1,240	.53
Technical except Medical & Dental	470	830	1.77
Other Professional, Technical & Kindred	1,800	2,040	1.13
Managers, Officials, Proprietors	2,750	3,450	1.25
Clerical & Kindred Workers	6,850	8,410	1.23
Sales Workers	3,140	3,550	1.13
Craftsmen, Foremen & Kindred	6,040	7,130	1.18
Construction Craftsmen	2,000	1,790	.90
Foremen, N.E.C.	940	1,510	1.61
Metalworking, Craftsmen excluding Mechanics	620	570	.92
Mechanics & Repairmen	1,480	2,210	1.49
Other Craftsmen & Kindred	680	800	1.18
Operatives & Kindred Workers	13,570	11,340	.84
Service Workers	8,350	10,480	1.26
Laborers excluding Farm & Mining	1,950	500	.26
Farmers & Farm Workers	—4,550	—2,090	.46

[1] Individual items may not add to totals due to rounding.

Professional, Technical, and Kindred

Indications are that the projected required need for professional, technical and kindred workers will be no greater during the 1968-1975 period than was experienced during the 1960-1968 period. The total need for expansion and replacement during both periods amounts to 6,600 per year. However, within this broad group there are several occupations where demand for new workers in coming years is expected to be substantially different from the experience in recent years. The most serious difference appears in the technical, except medical and dental group, which includes draftsmen, surveyors, radio operators and a host of other technical occupations. The total need for the group will amount to a little more than 200 per year between 1968 and 1975. On the other hand, the projected number of new teachers required annually from 1968-1975 is much lower than the number that have been supplied annually from 1960-1968. The projected required needs for all teachers during the period 1968-1975 will be for replacement because fewer elementary teachers will be needed as a result of sharply reduced birth rates.

Managers, Officials and Proprietors

There will be a moderately greater need for managers, officials and proprietors during the 1968-1975 period than was experienced during the 1960-1968 period. Most of this will result from the higher skill levels caused by diversification and expanding technological innovations in the State's economy.

Clerical and Kindred Workers

The experienced need for clerical and kindred workers from 1960 to 1968 amounted to about 6,800 per year while the projected required need for the period 1968-1975 is estimated at 8,400 per year. More pressure will be exerted on the economy in the future than during the last several years for stenographers, typists and secretaries, as well as a variety of other clerical

and kindred occupations such as bookkeepers, cashiers, and telephone operators. It may be possible, however, to satisfy this demand by merely increasing the output from existing facilities in the economy.

Sales Workers

More sales workers will be needed during the 1968-1975 period than were experienced during the 1960-1968 period for expansion and replacement. Here again, the projected imbalance is not too significant and can perhaps be satisfied through existing facilities.

Craftsmen, Foremen, and Kindred Workers

Craftsmen, foremen and kindred workers represent one of the largest broad occupational groups in the State. The projected required new job entrants from 1968 to 1975 for this group is 7,100 per year compared to the experienced need of 6,000 per year for the earlier comparison period. Sizeable differences are reflected in the projections for foremen, n. e. c., mechanics and repairmen, and a variety of other craftsmen and kindred workers. Fewer construction craftsmen and operatives and kindred workers will be required for the 1968-1975 period than were needed for the 1960-1968 period. For the most part this reflects expanding technology in the State.

Service Workers

More than 8,300 service workers were needed annually for expansion and replacement between 1960 and 1968. The projected number required in this group is expected to reach nearly 10,500 per year. This means that considerable attention will have to be directed to this area to minimize imbalances.

Laborers, excluding Farm and Mine; and Farmers and Farm Workers

The last two broad occupational groups including laborers and farmers and farm workers have been combined, for neither group will present a problem with regard to training. As indicated earlier in the study, technology is primarily responsible for reducing the number of jobs in these occupations. Only one-fourth as many laborers will be required during the 1968-1975 period as were supplied during the 1960-1968 period. By comparison over the same two periods, less than one-half as many farmers and farm workers will be required, and all of these will be for replacement.

METHODOLOGY

The occupational projections presented in this study were developed in two stages. First, projections of detailed industry employment totals were made for the terminal year (1975). Second, national industry-occupational matrices were used to develop occupational distributions.

Industry Projections

Generally, the occupational composition of individual industries is distinctive. For example, the composition of the trade industry consists largely of white-collar workers such as sales persons and clerks while employment in the construction industry is characterized by large numbers of blue-collar workers such as carpenters, bricklayers, and electricians. It follows that industry employment changes significantly influence the requirements for certain occupations. Because of the dependence of occupational requirements on industry employment levels, every precaution was taken to insure the maximum reliability of the industry employment projections.

Within the framework of the assumptions underlying this study which are outlined in the introduction, a number of limiting factors were considered in selecting the projection techniques. Principally, these included availability of technical staff, volume and precision of the projections, and computer capability and availability.

Although there are several ways of approaching the problem of forecasting industry employment, the techniques outlined in this study have one thing in common—regression analysis was applied to historical time series to develop first approximations of the projections. The obvious danger in relying on this method is the dependence of the projections on past trends which all too frequently change. Several regression models were used for all industries. Each projection was then carefully analyzed and frequently refined by labor analysts familiar with State markets, industrial trends and other economic and noneconomic factors in the State.

The regression models outlined below were used for all of the individual industries. Other models utilizing such variables as population and income were used infrequently when required by special circumstances.

Model I	The relationship between state employment in each industry and time;
Model II	The relationship between the logarithm of state employment in each industry and time;
Model III	The relationship between the ratio of state to national employment in each industry and time.

In Model I, state employment represented the dependent variable and time the independent variable. This method assumes a straight-line trend over time and for many industries in South Carolina, it has proven to be an effective technique for projecting employment. Model II was used to better fit those series which exhibit a curvilinear rather than linear relationship. The rationale behind this modification is that by converting to logarithms the series is transformed to a more linear and, therefore, easier to handle form. The assumption associated with Model III is that the ratio of state to national employment in an industry (dependent variable) can be compared to time (independent variable) and a trend in relationship determined. By extrapolating this relationship, a projected ratio is developed for each industry and is then applied to the comparable national industry projection to yield a forecast for the state industry.

Each of the regression models is expressed mathematically as follows:

S_e=state employment (annual averages)

N_e=national employment (annual averages)

a=constant; intercept; the value of the dependent variable when the independent variable is zero.

b=constant (slope of the regression line)

t=time

Model I $S_e=a+bt$

Model II Log $S_e=a+bt$

Model III $\frac{S_e}{N_e}=a+bt$

The third model outlined above placed a great deal of reliance on the national employment projections prepared by the U. S. Bureau of Labor Statistics (BLS). The national projections have the benefit of including a great many more variables than could be considered by most states.

Occupational Projections

As in the case of industry employment projections, there are a number of ways to determine future occupational requirements. Certain advantages and disadvantages are associated with the different methods. The technique selected to develop the occupational projections presented in this study relied on national industry-occupational matrices which have been developed by the U. S. Bureau of Labor Statistics. The matrix is a table showing the occupational composition of industries. For each industry, ratios are given showing the percentage of the total industry employment represented by each occupation. An outline of the projection method as illustrated in *Tomorrow's Manpower Needs* is shown below:

(a) The 1960 census with adjustments in some occupations is the primary source for base period estimates for occupations included in the matrix;

(b) The national industry-occupational patterns (ratios) for base year 1960 and terminal year 1975 are applied to the state industry employment totals for the same periods, and the occupation-by-industry totals derived from this step are summed to occupational totals;

(c) Change factors for each occupation are computed by dividing the 1975 occupational totals by the 1960 occupational totals as computed in step (b);

(d) The change factors from step (c) are then applied to the 1960 census-derived occupational totals from step (a) to yield 1975 occupational forecasts.

Replacement Needs

The establishment of occupational employment levels for the base and terminal periods permits estimation of the number of jobs that will be created (or abolished) in each occupation during the study period. Substantial numbers of new workers will be required to satisfy the expansion needs associated with the newly created jobs. To complete the labor requirements picture, the number of new workers that will be required to replace existing workers who withdraw from the labor force due to death or retirement must also be projected. These replacement needs and the already-determined expansion needs, when combined, represent the total labor requirements over the study period.

While expansion needs can be projected as the simple difference between employment in the base and terminal periods, replacement needs are not so easily determined. The BLS guidebook, *Tomorrow's Manpower Needs*, suggests several alternative methods for projecting replacement needs. We decided upon the simplest of these alternatives. The chosen method relies upon national estimates of annual labor force withdrawal by occupation and by sex. Distinction between the sexes is necessary because of the generally higher labor force withdrawal rates of women. The procedure followed to produce the projections of total labor force withdrawals by occupation (i.e., replacement needs) is described in detail in the BLS guidebook. In general terms, the procedure consists of multiplying the annual separation rate by the number of years in the study period to derive a composite rate for the entire period. This rate is then applied to the average employment during the study period. The procedure is duplicated for both sexes and the two figures thus derived are added to obtain the occupational total.

APPENDIX

APPENDIX TABLE 1. TOTAL EMPLOYMENT IN SOUTH CAROLINA
BY MAJOR INDUSTRY, 1960, 1968, AND PROJECTIONS TO 1975

Industry	Annual Average Employment			Net Change	
	1960	1968	1975	1960-1975	1968-1975
Total, All Industries	828,500	958,700	1,097,000	268,500	138,300
Agriculture, Forestry & Fisheries[1]	154,000	75,900	44,300	−109,700	− 31,600
Agriculture	153,000	74,700	43,000	−110,000	− 31,700
Forestry	900	1,200	1,200	300	0
Fisheries	100	100	100	0	0
Mining	1,700	1,600	1,900	200	300
Metal mining	100	0	0	−100	−100
Coal mining	0	0	0	0	0
Crude petroleum & natural gas	0	0	0	0	0
Nonmetallic mining & quarrying	1,600	1,600	1,900	300	300
Contract Construction	47,900	65,300	85,100	37,200	19,800
Manufacturing	255,500	338,700	407,500	152,000	68,800
Durable goods manufacturing	54,200	90,800	122,200	68,000	31,400
Lumber & wood products, except furniture	19,600	16,700	15,300	−4,300	−1,400
Logging camps & contractors	5,200	4,300	3,500	−1,700	− 800
Sawmills, millwork, miscellaneous wood products	14,400	12,500	11,800	−2,600	− 700
Furniture & fixtures	3,400	4,500	5,500	2,100	1,000
Stone, clay and glass	7,000	11,400	14,700	7,700	3,300
Glass & glass products	2,500	3,900	6,100	3,600	2,200
Cement, concrete & plaster	1,800	3,000	3,800	2,000	800
Structural clay products	1,300	1,700	2,000	700	300
Pottery & related products	500	1,100	1,200	700	100
Miscellaneous nonmetal mineral & stone products	1,000	1,700	1,700	700	0
Primary metal industries	600	1,100	1,600	1,000	500
Blast furnaces & steel works	400	300	400	0	100
Other primary metal industries	200	200	400	200	200
Primary nonferrous metals	100	600	800	700	200
Fabricated metal products n.e.c.	2,400	8,100	12,600	10,200	4,500
Machinery except electrical	6,700	14,600	21,300	14,600	6,700
Farm machinery & equipment	0	200	300	300	100
Office machinery	0	1,800	3,300	3,300	1,500
Miscellaneous machinery	6,600	12,600	17,700	11,100	5,100
Electrical machinery, equipment & supplies	3,600	12,500	23,900	20,300	11,400
Transportation equipment	8,000	14,600	16,500	8,500	1,900
Motor vehicles & equipment	200	1,000	900	700	− 100
Aircraft & parts	0	3,600	4,200	4,200	600
Ship & boatbuilding & repairs	7,700	8,900	10,100	2,400	1,200
Railroad & other transportation equipment	100	1,200	1,300	1,200	100
Professional & scientific instruments	1,000	2,900	4,200	3,200	1,300
Instruments except clocks	1,000	2,900	4,200	3,200	1,300
Watches & clock devices	0	0	0	0	0
Miscellaneous manufacturing	1,900	4,400	6,600	4,700	2,200
Nondurable goods manufacturing	201,300	247,800	285,300	84,000	37,500
Food & kindred products	11,800	14,200	14,500	2,700	300
Meat products	2,300	2,900	3,100	800	200
Dairy products	2,500	2,400	2,400	− 100	0
Canning, preserving & freezing	800	2,000	2,300	1,500	300
Grain mill products	700	900	500	− 200	− 400
Bakery products	1,900	2,100	2,200	300	100
Beverage industries	2,300	2,800	3,100	800	300
Other food products	1,300	1,000	1,000	− 300	0
Tobacco manufactures	1,400	1,200	1,100	− 300	− 100
Textile mill products	130,800	148,500	153,700	22,900	5,200
Apparel, and accessories, and miscellaneous products	30,600	41,700	61,000	30,400	19,300
Paper & allied products	8,100	10,800	15,300	7,200	4,500
Pulp, paper, & paper board mills	4,100	4,800	6,400	2,300	1,600
Paperboard containers & boxes	3,000	4,500	6,600	3,600	2,100
All other paper products	1,000	1,500	2,300	1,300	800
Printing, publishing, and allied products	4,300	5,300	6,200	1,900	900
Chemicals & allied products	12,900	23,400	30,100	17,200	6,700
Synthetic fibers	3,600	12,200	17,500	13,900	5,300
Drugs & medicine	0	800	1,100	1,100	300
Paints, varnishes & related products	100	200	400	300	200
Other chemicals	9,100	10,200	11,100	2,000	900

APPENDIX TABLE 1. TOTAL EMPLOYMENT IN SOUTH CAROLINA
BY MAJOR INDUSTRY, 1960, 1968, AND PROJECTIONS TO 1975—Continued

Industry	Annual Average Employment			Net Change	
	1960	1968	1975	1960-1975	1968-1975
Petroleum refining & related industries	300	200	200	— 100	0
Petroleum refining	100	0	0	— 100	0
Other petroleum & coal products	200	200	200	0	0
Rubber & miscellaneous plastic products	1,000	2,300	3,000	2,000	700
Rubber products	200	1,800	700	500	—1,100
Miscellaneous plastic products	900	500	2,300	1,400	1,800
Leather and leather products	100	100	200	100	100
Leather tanning & finishing	0	0	0	0	0
Footwear except rubber	0	0	0	0	0
All other leather products	100	100	200	100	100
Transportation, Communication & Public Utilities	30,100	40,000	44,200	14,100	4,200
Transportation	16,100	19,400	22,300	6,200	2,900
Railroad transportation	5,000	3,900	4,400	— 600	500
Local & interurban passenger	1,700	1,800	1,900	200	100
Local transit & interurban, except taxis	1,100	1,200	1,400	300	200
Taxis	600	600	500	— 100	— 100
Motor freight transportation & warehousing	7,000	10,300	12,300	5,300	1,900
Trucking	1,200	9,100	11,000	9,800	1,900
Warehousing	5,800	1,200	1,300	—4,500	100
Water transportation	1,500	2,200	2,100	600	— 100
Air transportation	600	800	900	300	100
Pipelines	0	0	100	100	100
Transportation services	300	300	600	300	300
Communications & public utilities	13,900	20,600	22,000	8,100	1,400
Communications	6,300	9,300	10,100	3,800	800
Telephone	4,700	7,300	8,100	3,400	800
Telegraph	300	200	200	— 100	0
Radio & T.V.	1,300	1,700	1,800	500	100
Electric, gas and sanitary services	7,700	11,300	11,900	4,200	600
Electric, gas & steam	7,300	10,700	10,900	3,600	200
Water & irrigation	0	100	100	100	0
Sanitary services	400	500	900	500	400
Wholesale & Retail Trade	123,500	151,400	174,300	50,800	22,900
Wholesale trade	22,400	29,200	36,700	14,300	7,500
Motor vehicles & equipment	1,800	2,600	3,800	2,000	1,200
Drugs & chemicals	1,200	1,800	2,300	900	500
Dry goods & apparel	400	700	1,000	600	300
Groceries & related products	6,100	5,200	5,300	— 800	100
Electrical goods, plumbing & heating supplies	1,700	3,100	5,000	3,300	1,900
Machinery & equipment	2,700	4,700	6,800	4,100	2,100
Miscellaneous wholesale trade	8,400	11,200	12,600	4,200	1,400
Retail trade	101,100	122,200	137,600	36,500	15,400
Building material, hardware & farm equipment	7,800	7,800	7,800	0	0
General merchandising	19,100	24,100	26,800	7,700	2,700
Limited price stores	5,700	5,500	6,300	500	800
Other general merchandise	13,400	18,700	20,400	7,000	1,700
Food & dairy stores	17,400	21,900	24,100	6,700	2,200
Auto dealers & gas stations	18,000	19,900	21,200	3,200	1,300
Auto & accessory dealers	12,600	14,100	14,800	2,200	700
Gasoline service stations	5,400	5,800	6,400	1,000	600
Apparel & accessories	5,400	6,100	7,300	1,900	1,200
Furniture, home furnishing & equipment stores	6,600	7,200	8,000	1,400	800
Eating & drinking places	13,800	18,900	22,300	8,500	3,400
Miscellaneous retail stores	13,000	16,200	20,200	7,200	4,000
Drug stores	4,800	5,500	6,500	1,700	1,000
Other retail stores	8,200	10,700	13,700	5,500	3,000
Finance, Insurance & Real Estate	22,800	28,100	35,800	13,000	7,700
Finance	7,300	11,800	17,200	9,900	5,400
Banks & credit agencies	7,100	11,400	16,800	9,700	5,400
Stock brokers & investment companies	200	400	400	200	0
Insurance	11,500	11,600	12,700	1,200	1,100
Real estate	3,900	4,800	5,900	2,000	1,100
Services	165,700	223,100	264,000	98,300	40,900
Hotels and other lodging places	4,900	7,400	11,100	6,200	3,700
Personal services	17,400	19,400	21,500	4,100	2,100
Laundries, cleaning & valet services	14,000	14,500	12,400	— 1,600	— 2,100

APPENDIX TABLE 1. TOTAL EMPLOYMENT IN SOUTH CAROLINA BY MAJOR INDUSTRY, 1960, 1968, AND PROJECTIONS TO 1975—Continued

Industry	Annual Average Employment			Net Change	
	1960	1968	1975	1960-1975	1968-1975
All other personal services	3,400	4,900	9,100	5,700	4,200
Miscellaneous business services	3,100	9,300	14,300	11,200	5,000
Advertising	400	400	400	0	0
Other miscellaneous business services	2,700	8,900	13,800	11,100	4,900
Auto repair services & garages	3,800	5,200	6,500	2,700	1,300
Miscellaneous repair services	3,400	3,100	3,700	300	600
Motion pictures & theatres	1,400	1,200	1,300	— 100	100
Miscellaneous entertainment & recreation	1,400	2,200	4,300	2,900	2,100
Medical & other health services	21,100	30,400	40,400	19,300	10,000
Hospitals	14,100	19,400	26,700	12,600	7,300
Other medical & health services	7,100	11,000	13,700	6,600	2,700
Legal services	1,800	2,600	3,100	1,300	500
Education services	43,400	65,700	72,200	28,800	6,500
Nonprofit membership organizations	8,300	12,400	13,000	4,700	600
Welfare & religious organizations	6,900	10,100	10,600	3,700	500
Other nonprofit membership organizations	1,400	2,300	2,400	1,000	100
Private households	53,600	59,300	65,400	11,800	6,100
Miscellaneous services	2,000	4,700	7,200	5,200	2,500
Engineering & architectural services	1,000	3,200	5,000	4,000	1,800
Accounting & bookkeeping services	800	1,200	1,600	800	400
All other professional services	200	400	600	400	200
Government Public Administration	27,300	34,600	39,900	12,600	5,300
Federal public administration	15,400	20,100	23,200	7,800	3,100
Postal service	5,400	5,700	6,500	1,100	800
Other federal public administration	10,000	14,400	16,700	6,700	2,300
State public administration	5,100	6,100	7,100	2,000	1,000
Local public administration	6,800	8,400	9,600	2,800	1,200

[1] Includes farm production and agricultural service, forestry, and fisheries.

APPENDIX TABLE 2. TOTAL EMPLOYMENT BY OCCUPATION IN SOUTH CAROLINA 1960, 1968, AND PROJECTIONS TO 1975 WITH PERCENTAGE CHANGES FROM 1960-1975 AND 1968-1975

Occupation	Employment			Per cent Change	
	1960	1968	1975	1960-1975	1968-1975
Total[1]	803,730[2]	958,700	1,097,000	36.5	14.4
Professional, Technical, and Kindred	66,860	98,560	121,910	82.6	23.7
Engineers, technical	4,760	9,600	16,170	239.7	91.1
Engineers aeronautical	10	70	110	1,000.0	57.1
Engineers chemical	370	630	850	129.7	34.9
Engineers civil	1,290	1,890	2,980	131.0	57.7
Engineers electrical	810	1,890	3,460	327.2	83.1
Engineers industrial	770	1,840	3,220	318.2	75.0
Engineers mechanical	720	1,610	2,340	225.0	46.6
Engineers metallurgical	60	140	240	300.0	71.4
Engineers mining	20	40	30	50.0	33.3
Other engineers, technical	710	1,490	2,940	314.1	97.3
Medical, and other health workers	12,210	17,110	20,510	68.0	19.9
Dentists	480	620	740	54.2	19.4
Dietitians, nutritionists	410	530	550	34.1	3.8
Nurses, professional	5,900	8,660	10,290	74.4	18.8
Optometrists	140	180	150	7.1	—16.7
Osteopaths	*	*	*	—	—
Pharmacists	1,140	1,260	1,220	7.0	— 3.2
Physicians, surgeons	1,830	2,580	3,000	63.9	16.3
Psychologists	50	90	110	120.0	22.2
Technicians, medical, dental	910	1,650	2,580	183.5	56.4
Veterinarians	120	180	250	103.3	38.9
Other medical and health	1,230	1,360	1,620	31.7	19.1
Teachers	25,530	34,590	33,900	32.8	— 2.0
Teachers, elementary	14,900	18,720	16,390	10.0	—12.4

APPENDIX TABLE 2. TOTAL EMPLOYMENT BY OCCUPATION IN SOUTH CAROLINA 1960, 1968, AND PROJECTIONS TO 1975 WITH PERCENTAGE CHANGES FROM 1960-1975 AND 1968-1975—Continued

Occupation	Employment			Per cent Change	
	1960	1968	1975	1960-1975	1968-1975
Teachers, secondary	7,650	11,320	12,220	59.7	8.0
Teachers, college	1,840	2,990	3,530	91.8	18.1
Teachers, other	1,140	1,560	1,760	54.4	12.8
Natural scientists	1,120	1,740	2,900	158.9	66.7
Chemists	540	830	1,520	181.5	83.1
Agricultural scientists	350	420	600	71.4	42.9
Biological scientists	50	90	120	140.0	33.3
Geologists, geophysicists	10	20	30	200.0	50.0
Mathematicians	*	10	20	—	100.0
Physicists	130	300	500	284.6	66.7
Other natural scientists	40	70	110	175.0	57.1
Social scientists	100	180	240	140.0	33.3
Economists	70	120	170	142.9	41.7
Statisticians, actuaries	30	50	60	100.0	20.0
Other social scientists	*	10	10	—	0
Technicians except medical and dental	3,680	6,780	11,520	213.0	69.9
Draftsmen	680	1,550	1,990	192.6	28.4
Surveyors	430	790	1,190	176.7	50.6
Air traffic controllers	150	200	230	53.3	15.0
Radio operators	250	330	400	60.0	21.2
Technicians, other	2,170	3,910	7,710	255.3	97.2
Other professional, technical and kindred workers	19,460	28,560	36,670	88.4	28.4
Accountants and auditors	2,880	4,210	5,260	82.6	24.9
Airplane pilots, navigators	70	100	120	71.4	20.0
Architects	210	470	670	219.0	42.6
Clergymen	3,690	4,820	4,480	21.4	7.1
Designers except design draftsmen	170	260	470	176.5	80.8
Editors and reporters	590	760	980	66.1	28.9
Lawyers and judges	1,710	2,440	2,670	56.1	9.4
Librarians	920	1,290	1,330	44.6	3.1
Personnel and labor relations workers	740	1,140	1,690	128.4	48.2
Photographers	290	380	450	55.2	18.4
Social and welfare workers	800	1,110	1,310	63.8	18.0
Workers in arts, entertainment	3,330	4,670	5,390	61.9	15.4
Professional, technical, kindred, n.e.c.	4,060	6,910	11,850	191.9	71.5
Managers, Officials, Proprietors	53,490	63,800	75,790	41.7	18.8
Conductors, railroad	280	250	280	0	12.0
Officers, pilots, engineers ship	180	210	240	33.3	14.3
Creditmen	460	660	950	106.5	43.9
Purchasing agents	560	840	1,080	92.9	28.6
Postmasters and assistants	490	420	360	−26.5	−14.4
Managers, officials, proprietors, n.e.c.	51,520	61,420	72,880	41.5	18.7
Clerical and Kindred Workers	74,040	101,390	128,560	73.6	26.8
Stenographers, typists, secretaries	18,260	26,580	34,810	90.6	31.0
Office machine operators	1,410	2,020	3,110	120.6	54.0
Other clerical, kindred workers	54,370	72,790	90,640	66.7	24.5
Accounting clerks	330	430	480	45.5	11.6
Bookkeepers, hand	8,760	10,840	12,720	45.2	17.3
Bank tellers	1,040	1,880	3,000	188.5	59.6
Cashiers	5,130	8,200	11,270	119.7	37.4
Mail carriers	1,870	1,970	2,230	19.3	13.2
Postal clerks	1,590	1,660	1,880	18.2	13.3
Shipping, receiving clerks	2,680	3,330	4,100	53.0	23.1
Telephone operators	2,590	3,520	4,250	64.1	20.7
Clerical and kindred, n.e.c.	30,380	40,960	50,710	66.9	23.8
Sales Workers	52,880	63,950	74,240	40.4	16.1
Craftsmen, Foremen and Kindred	96,790	128,030	158,910	64.2	24.1
Construction craftsmen	32,900	42,760	48,890	48.6	14.3
Carpenters	13,150	16,280	17,090	30.0	5.0
Brickmasons, stone, tile setters	3,300	4,560	5,120	55.2	12.3
Cement, concrete finishers	550	800	1,150	109.1	43.6
Electricians	3,770	5,110	6,240	65.5	22.1
Excavating, grading machine operators	2,010	2,610	3,470	72.6	23.0
Painters and paperhangers	5,060	6,680	6,850	35.4	2.5
Plasterers	490	630	760	55.1	20.6

APPENDIX TABLE 2. TOTAL EMPLOYMENT BY OCCUPATION IN SOUTH CAROLINA 1960, 1968, AND PROJECTIONS TO 1975 WITH PERCENTAGE CHANGES FROM 1960-1975 AND 1968-1975—Continued

Occupation	Employment			Per cent Change	
	1960	1968	1975	1960-1975	1968-1975
Plumbers and pipefitters	3,230	4,310	5,730	77.4	32.9
Roofers and slaters	580	760	1,010	74.1	32.9
Structural metalworkers	760	1,020	1,470	93.4	44.1
Foremen, n.e.c.	14,330	19,140	26,440	84.5	38.1
Metalworking, craftsmen except mechanics	6,180	9,940	12,450	101.5	25.3
Machinists and related occupations	3,470	5,540	6,410	84.7	15.6
Blacksmiths, forgemen, hammermen	140	150	130	— 7.1	—13.3
Boilermakers	190	250	330	73.7	32.0
Heat treaters, annealers, tempers	30	80	100	233.3	25.0
Millwrights	360	500	640	77.8	28.0
Molders, metal (except coremakers)	290	600	890	206.9	48.3
Pattern makers, metal and wood	70	140	210	200.0	50.0
Rollers and roll hands	*	10	10	—	0
Sheetmetal workers	1,440	2,270	3,140	118.1	38.3
Toolmakers, diemakers, setters	190	400	590	210.5	46.5
Mechanics and repairmen	22,270	30,440	41,390	85.9	26.0
Airplane mechanics and repairmen	360	690	760	111.1	10.1
Motor vehicle mechanics	8,010	10,220	11,410	42.4	11.6
Office machine mechanics	240	420	650	170.8	54.7
Radio and T.V. mechanics	1,240	1,410	1,600	29.0	13.5
Railroad and car shop mechanics	240	240	250	4.2	4.2
Other mechanics and repairmen	12,180	17,460	26,720	119.4	53.0
Printing trades craftsmen	1,700	2,090	2,250	32.4	6.7
Compositors and typesetters	1,040	1,220	1,130	8.7	— 7.4
Electrotypers and stereotypers	60	50	40	—33.3	—20.0
Engravers except photoengravers	250	350	420	68.0	20.0
Photoengravers, lithographers	40	70	120	200.0	61.4
Pressmen and plate printers	310	400	540	74.2	35.0
Transportation, and public utility craftsmen	3,270	4,650	5,460	67.0	16.4
Linemen and servicemen	2,500	4,050	4,940	97.6	22.0
Locomotive engineers	440	410	470	6.8	14.6
Locomotive firemen	330	190	50	—84.8	—73.7
Other craftsmen and kindred workers	16,140	19,010	22,030	36.5	15.9
Bakers	580	840	680	17.2	—19.0
Cabinetmakers	590	730	740	25.4	1.4
Cranemen derrick, hoistmen	730	1,050	1,470	101.4	40.0
Glaziers	70	90	140	100.0	55.6
Jewelers and watchmakers	330	400	430	30.3	6.5
Loomfixers	7,280	7,830	8,490	16.6	8.4
Opticians, lens grinders	120	190	230	91.7	21.1
Inspectors, log and lumber	410	370	470	14.6	26.0
Inspectors, other	740	930	1,390	87.8	49.5
Upholsterers	520	600	770	48.1	28.3
Craftsmen, kindred, n.e.c.	4,770	5,980	7,220	51.4	20.6
Operatives and Kindred Workers	206,590	268,780	299,990	45.2	11.6
Drivers and deliverymen	28,230	37,020	45,990	62.9	24.2
Drivers, bus, truck, tractor	21,680	28,830	35,770	65.0	24.1
Deliverymen, routemen	6,550	8,190	10,220	56.0	24.7
Transportation and public utility operators	1,230	1,380	1,540	25.2	11.6
Brakemen, switchmen	730	660	770	5.5	16.7
Powerstation operators	300	450	530	76.7	16.7
Sailors and deckhands	200	270	240	20.0	11.1
Semiskilled metalworkers	5,020	11,820	15,150	201.8	28.2
Assemblers, metalworking C-A	70	210	300	328.6	42.9
Assemblers, metalworking C-B	310	1,020	1,440	364.5	41.2
Inspectors, metalworking C-B	350	1,160	1,610	360.0	38.7
Machine tool operators C-B	1,480	3,830	4,250	187.2	11.0
Electroplaters	70	240	350	400.0	45.8
Electroplater helpers	120	420	560	366.7	33.3
Furnacemen, smeltermen	150	350	450	200.0	28.6
Heaters, metal	20	30	40	100.0	33.3
Welders, flamecutters	2,450	4,560	6,150	151.0	34.9
Semiskilled textile occupations	43,980	56,070	52,450	19.3	— 6.5
Knitters, loopers, toppers	680	830	820	20.6	— 1.3
Spinners, textile	12,050	13,320	8,970	—25.6	—33.7

APPENDIX TABLE 2. TOTAL EMPLOYMENT BY OCCUPATION IN SOUTH CAROLINA 1960, 1968, AND PROJECTIONS TO 1975 WITH PERCENTAGE CHANGES FROM 1960-1975 AND 1968-1975—Continued

Occupation	Employment			Per cent Change	
	1960	1968	1975	1960-1975	1968-1975
Weavers, textile	14,250	15,560	11,190	−21.5	−38.2
Sewers and stitchers, manufacturing	17,000	26,360	31,470	85.1	19.4
Other operatives and kindred	128,130	162,490	184,860	44.3	13.7
Asbestos, insulation workers	300	460	620	106.7	34.7
Attendant auto service parking	5,820	6,120	7,450	28.0	21.6
Blasters and powdermen	10	10	10	0	0
Laundry, dry cleaning operators	6,150	6,310	5,490	−10.7	−14.0
Mine operatives, laborers, n.e.c.	520	430	500	− 3.8	16.3
Meat cutters, except meat packing	1,640	1,950	1,920	17.1	− 1.5
Operatives & kindred, n.e.c.	113,690	147,210	168,870	48.5	14.6
Service Workers	105,890	128,820	156,400	47.7	21.4
Private household workers	52,010	56,970	62,200	19.6	9.3
Protective service	6,260	7,380	8,070	28.9	9.3
Firemen	880	1,030	1,110	26.1	6.7
Policemen, other law enforcement officers	2,580	3,200	3,540	37.2	10.6
Guards, watchmen, doorkeepers	2,800	3,150	3,420	22.1	8.6
Food service workers	15,390	21,220	25,400	65.0	19.7
Bartenders	170	220	260	52.9	18.2
Cooks except private household	6,860	9,690	11,140	62.4	15.0
Counter, fountain workers	1,190	1,870	2,420	103.4	29.4
Waiters, waitresses	7,170	9,440	11,580	61.5	22.7
Other service workers	32,230	43,250	60,730	88.4	40.4
Airline stewards, stewardesses	10	20	30	200.9	50.0
Attendants, hospital and other	3,540	5,770	8,300	134.5	43.8
Charwomen and cleaners	2,810	3,770	4,900	74.4	30.0
Janitors and sextons	6,430	8,840	10,720	66.7	21.3
Nurses, practical	1,670	2,160	2,660	59.3	23.1
Other service workers, n.e.c.	17,770	22,690	34,120	92.0	50.4
Laborers except Farm and Mine	52,210	59,680	55,820	6.9	− 6.4
Farmers and Farm Workers	94,980	45,730	25,380	−73.3	−44.5

[1] Individual items may not add to totals due to rounding.
[2] This figure represents the April 1960 census count and differs from total employment referred to elsewhere in this study which is calculated on an annual average basis.
* Less than 10.
Source: U. S. Census of Population, 1960 PC(1) 42 D. Table 123; U. S. Department of Labor, Bureau of Labor Statistics.

APPENDIX TABLE 3. EXPANSION AND REPLACEMENT NEEDS BY OCCUPATION IN SOUTH CAROLINA FROM 1968 TO 1975

Occupation	Expansion Needs 1968-1975	Replacement Needs 1968-1975	Total Demand For Workers 1968-1975
Totals	138,360	207,250	345,610
Professional, Technical and Kindred	23,350	22,790	46,140
Engineers, technical	6,570	1,170	7,740
Engineers, aeronautical	40	10	50
Engineers, chemical	220	50	270
Engineers, civil	1,090	320	1,410
Engineers, electrical	1,570	190	1,760
Engineers, industrial	1,380	200	1,550
Engineers, mechanical	730	190	920
Engineers, metallurgical	100	20	120
Engineers, mining	− 10	0	− 10
Other engineers, technical workers	1,450	200	1,650
Medical and other health workers	3,400	4,830	8,230
Dentists	120	50	170
Dietitians, nutritionists	20	180	200
Nurses, professional	1,630	3,030	4,660
Optometrists	− 30	10	− 20
Osteopaths	*	*	*
Pharmacists	− 40	260	220

APPENDIX TABLE 3. EXPANSION AND REPLACEMENT NEEDS BY OCCUPATION IN SOUTH CAROLINA FROM 1968 TO 1975—Continued

Occupation	Expansion Needs 1968-1975	Replacement Needs 1968-1975	Total Demand For Workers 1968-1975
Physicians, surgeons	420	200	620
Psychologists	20	20	30
Technical, medical, and dental	930	590	1,520
Veterinarians	70	30	100
Other medical and health	260	480	740
Teachers	— 690	9,350	8,660
Teachers, elementary	—2,330	5,510	3,180
Teachers, secondary	900	2,850	3,750
Teachers, college	540	550	1,090
Teachers, other	200	440	640
Natural scientists	1,160	180	1,340
Chemists	690	90	780
Agricultural scientists	180	50	230
Biological scientists	30	10	40
Geologists, geophysicists	10	0	10
Mathematicians	10	*	10
Physicists	200	20	220
Other natural scientists	40	10	40
Social scientists	60	20	80
Economists	50	20	70
Statisticians, actuaries	10	10	20
Other social scientists	*	*	*
Technicians except medical and dental	4,740	1,090	5,830
Draftsmen	440	120	560
Surveyors	400	90	490
Air traffic controllers	30	10	40
Radio operators	70	20	90
Technicians, other	3,800	850	4,650
Other professional, technical, and kindred	8,110	6,150	14,260
Accountants and auditors	1,050	780	1,830
Airplane pilots, navigators	20	10	30
Architects	200	100	300
Clergymen	— 340	860	510
Designers except design draftsmen	210	60	270
Editors and reporters	220	180	400
Lawyers and judges	230	530	760
Librarians	40	470	510
Personnel and labor relations workers	550	220	770
Photographers	70	60	130
Social and welfare workers	200	350	550
Workers in art, entertainment	720	1,170	1,890
Professional, technical, kindred, n.e.c.	4,940	1,370	6,300
Managers, Officials, Proprietors	11,990	12,150	24,140
Conductors, railroad	30	70	100
Officers, pilots, engineers, ship	30	30	60
Creditmen	290	140	430
Purchasing agents	240	140	380
Postmasters and assistants	— 60	120	60
Managers, officials, proprietors, n.e.c.	11,460	11,650	23,110
Clerical and Kindred Workers	27,170	31,700	58,870
Stenographers, typists, secretaries	8,230	10,770	19,000
Office machine operators	1,090	680	1,770
Other clerical, kindred workers	17,850	20,250	38,100
Accounting clerks	50	130	180
Bookkeepers, hand	1,880	3,430	5,310
Bank tellers	1,120	690	1,810
Cashiers	3,070	2,660	5,730
Mail carriers	260	250	510
Postal clerks	220	260	480
Shipping, receiving clerks	770	450	1,220
Telephone operators	730	1,320	2,050
Clerical and kindred, n.e.c.	9,750	11,060	20,810
Sales Workers	10,290	14,560	24,920
Craftsmen, Foremen and Kindred	30,880	19,040	49,920

APPENDIX TABLE 3. EXPANSION AND REPLACEMENT NEEDS BY OCCUPATION IN SOUTH CAROLINA FROM 1968 TO 1975—Continued

Occupation	Expansion Needs 1968-1975	Replacement Needs 1968-1975	Total Demand For Workers 1968-1975
Construction craftsmen	6,130	6,430	12,560
Carpenters	810	2,700	3,510
Brickmasons, stone, tile setters	560	510	1,070
Cement, concrete finishers	350	100	450
Electricians	1,130	640	1,770
Excavating, grading machine operators	860	280	1,140
Painters and paperhangers	170	1,190	1,360
Plasterers	130	80	210
Plumbers and pipefitters	1,420	630	2,050
Roofers and slaters	250	120	370
Structural metalworkers	450	170	620
Foremen, n.e.c.	7,300	3,270	10,570
Metalworking, craftsmen except mechanics	2,510	1,470	3,980
Machinists and related occupations	870	850	1,720
Blacksmiths, forgemen, hammermen	— 20	30	10
Boilermakers	80	40	120
Heat treaters, annealers, temperers	20	20	40
Millwrights	140	80	220
Molders, metal (except coremakers)	290	80	370
Pattern makers, metal and wood	70	30	100
Rollers and roll hands	*	—	*
Sheet metal workers	870	290	1,160
Toolmakers, diemakers, setters	190	60	250
Mechanics and repairmen	10,950	4,500	15,450
Airplane mechanics and repairmen	70	50	120
Motor vehicle mechanics	1,190	990	2,180
Office machine mechanics	230	40	270
Radio and T.V. mechanics	190	100	290
Railroad and car shop mechanics	10	50	60
Other mechanics and repairmen	9,260	3,280	12,540
Printing trades craftsmen	160	320	480
Compositors and typesetters	— 90	170	80
Electrotypers and stereotypers	— 10	10	0
Engravers except photoengravers	70	70	140
Photoengravers, lithographers	50	10	60
Pressmen and plate printers	140	50	190
Transportation and public utility craftsmen	810	440	1,250
Linemen and servicemen	890	300	1,190
Locomotive engineers	60	140	190
Locomotive firemen	— 140	10	— 130
Other craftsmen and kindred workers	3,020	2,610	5,630
Bakers	— 160	140	— 20
Cabinetmakers	10	140	140
Cranemen, derrick, hoistmen	420	150	570
Glaziers	50	10	60
Jewelers and watchmakers	30	80	110
Loomfixers	660	990	1,650
Opticians, lens grinders	40	30	70
Inspectors, log and lumber	100	60	160
Inspectors, other	460	200	660
Upholsterers	170	90	260
Craftsmen, kindred, n.e.c.	240	720	1,960
Operatives and Kindred Workers	31,310	48,150	79,460
Drivers and deliverymen	8,970	3,720	12,690
Drivers, bus, truck, tractor	6,940	2,780	9,720
Deliverymen, routemen	2,030	940	2,970
Transportation and public utility operators	160	200	360
Brakemen, switchmen	110	90	200
Powerstation operators	80	80	160
Sailors and deck hands	— 30	30	0
Semiskilled metalworkers	3,430	1,610	5,040
Assemblers, metalworking C-A	90	40	130
Assemblers, metalworking C-B	420	210	630
Inspectors, metalworking C-B	450	320	770

APPENDIX TABLE 3. EXPANSION AND REPLACEMENT NEEDS BY OCCUPATION IN SOUTH CAROLINA FROM 1968 TO 1975—Continued

Occupation	Expansion Needs 1968-1975	Replacement Needs 1968-1975	Total Demand For Workers 1968-1975
Machine tool operators C-B	420	410	830
Electroplaters	110	30	140
Electroplater helpers	140	60	200
Furnacemen, smeltermen	100	50	150
Heaters, metal	10	10	20
Welders, flamecutters	1,590	500	2,090
Semiskilled textile occupations	−3,620	13,730	10,110
Knitters, loopers, toppers	− 10	180	170
Spinners, textile	−4,350	2,510	−1,840
Weavers, textile	−4,370	2,430	−1,940
Sewers and stitchers, manufacturing	5,110	8,610	13,720
Other operatives and kindred	22,370	28,880	51,250
Asbestos, insulation workers	160	60	220
Attendant auto service and park	1,330	500	1,830
Blasters and powdermen	*	0	*
Laundry, dry cleaning operators	− 820	1,610	790
Mine operatives, laborers, n.e.c.	70	50	120
Meat cutters, except meat packers	− 30	280	250
Operatives and kindred, n.e.c.	21,660	26,390	48,050
Service Workers	27,580	45,800	73,380
Private household workers	5,230	23,590	28,820
Protective service	690	1,590	2,280
Firemen	80	190	270
Policemen, other law enforcement officers	340	390	730
Guards, watchmen, doorkeepers	270	1,000	1,270
Food service workers	4,180	6,200	10,380
Bartenders	40	50	90
Cooks except private household	1,450	2,840	4,290
Counter, fountain workers	550	550	1,100
Waiters, waitresses	2,140	2,760	4,900
Other service workers	17,480	14,420	31,900
Airline stewards, stewardesses	10	10	20
Attendants, hospital and other	2,530	1,790	4,320
Charwomen and cleaners	1,130	1,080	2,210
Janitors and sextons	1,880	2,780	4,660
Nurses, practical	500	930	1,430
Other service workers, n.e.c.	11,430	7,830	19,260
Laborers except Farm and Min.	−3,860	7,360	3,500
Farmers and Farm Workers	−20,350	5,700	−14,650

[1] Individual amount may not add to total due to rounding.

APPENDIX TABLE 4. ESTIMATED AVERAGE ANNUAL NEW JOB ENTRANTS EXPERIENCED FROM 1960-1968 AND PROJECTED REQUIRED FROM 1968-1975 BY OCCUPATION IN SOUTH CAROLINA

Occupation	Annual Average New Job Entrants		
	Experienced Need 1960-1968	Projected Required 1968-1975	Ratio of Projected Required To Experienced Need
Total[1]	44,650	49,360	1.11
Professional, Technical, and Kindred	6,550	6,590	1.01
Engineers, technical	700	1,110	1.59
Engineers aeronautical	10	10	1.00
Engineers chemical	40	40	1.00
Engineers civil	110	200	1.82
Engineers electrical	150	250	1.67
Engineers industrial	150	230	1.53
Engineers mechanical	130	130	1.00
Engineers metallurgical	10	20	2.00
Engineers mining	0	0	0
Other engineers, technical	110	240	2.18

APPENDIX TABLE 4. ESTIMATED AVERAGE ANNUAL NEW JOB ENTRANTS EXPERIENCED FROM 1960-1968 AND PROJECTED REQUIRED FROM 1968-1975 BY OCCUPATION IN SOUTH CAROLINA—Continued

Occupation	Annual Average New Job Entrants		
	Experienced Need 1960-1968	Projected Required 1968-1975	Ratio of Projected Required To Experienced Need
Medical, and other health workers	1,150	1,180	1.03
Dentists	20	20	1.00
Dietitians, nutritionists	40	30	.75
Nurses, professional	680	670	.99
Optometrists	10	0	0
Osteopaths	*	*	*
Pharmacists	50	30	.60
Physicians, sufgeons	120	90	.75
Psychologists	10	10	1.00
Technicians, medical, dental	140	220	1.57
Veterinarians	10	14	1.40
Other medical and health	80	110	1.38
Teachers	2,320	1,240	.53
Teachers, elementary	1,230	450	.37
Teachers, secondary	790	540	.68
Teachers, college	200	160	.80
Teachers, other	100	90	.90
Natural scientists	90	190	2.10
Chemists	40	110	2.75
Agricultural scientists	10	30	3.00
Biological scientists	10	10	1.00
Geologists, geophysicists	0	0	0
Mathematicians	0	0	0
Physicists	20	30	1.50
Other natural scientists	0	10	*
Social scientists	10	10	1.00
Economists	10	10	1.00
Statisticians, actuaries	0	0	0
Other social scientists	0	*	*
Technicians except medical and dental	470	830	1.77
Draftsmen	120	80	.67
Surveyors	50	70	1.40
Air traffic controllers	10	10	1.00
Radio operators	10	10	1.00
Technicians, other	280	660	2.36
Other professional, technical and kindred workers	1,800	2,040	1.13
Accountants and auditors	250	260	1.04
Airplane pilots, navigators	0	0	0
Architects	40	40	1.00
Clergymen	250	70	.28
Designers except.design draftsmen	20	40	2.00
Editors and reporters	40	60	1.50
Lawyers and judges	150	110	.73
Librarians	100	70	.70
Personnel and labor relations workers	70	110	1.57
Photographers	20	20	1.00
Social and welfare workers	80	80	1.00
Workers in arts, entertainment	300	270	.90
Professional, technical, kindred n.e.c.	470	900	1.91
Managers, Officials, Proprietors	2,750	3,450	1.25
Conductors, railroad	10	10	1.00
Officers, pilots, engineers ship	10	10	1.00
Creditmen	40	60	1.50
Purchasing agents	50	50	1.00
Postmasters and assistants	10	10	1.00
Managers, officials, proprietors, n.e.c.	2,640	3,300	1.25
Clerical and Kindred Workers	6,850	8,410	1.23
Stenographers, typists, secretaries	2,160	2,710	1.25
Office machine operators	140	250	1.79
Other clerical, kindred workers	4,540	5,440	1.20
Accounting clerks	30	30	1.00
Bookkeepers, hand	170	760	1.13
Bank tellers	160	260	1.63

APPENDIX TABLE 4. ESTIMATED AVERAGE ANNUAL NEW JOB ENTRANTS EXPERIENCED FROM 1960-1968 AND PROJECTED REQUIRED FROM 1968-1975 BY OCCUPATION IN SOUTH CAROLINA—Continued

Occupation	Annual Average New Job Entrants		
	Experienced Need 1960-1968	Projected Required 1968-1975	Ratio of Projected Required To Experienced Need
Cashiers	640	820	1.28
Mail carriers	40	70	1.75
Postal clerks	40	70	1.75
Shipping, receiving clerks	130	170	1.31
Telephone operators	260	290	1.12
Clerical and kindred, n.e.c.	2,550	2,970	1.16
Sales Workers	3,140	3,550	1.13
Craftsmen, Foremen and Kindred	6,040	7,130	1.18
Construction craftsmen	2,000	1,790	.90
Carpenters	730	500	.68
Brickmasons, stone, tile setters	220	150	.68
Cement, concrete finishers	40	60	1.50
Electricians	240	250	1.04
Excavating, grading machine operators	110	160	1.45
Painters and paperhangers	350	190	.54
Plasterers	30	30	1.00
Plumbers and pipefitters	200	290	1.45
Roofers and slaters	40	50	1.25
Structural metalworkers	50	90	1.80
Foremen, n.e.c.	940	1,510	1.61
Metalworking, craftsmen except mechanics	620	570	.92
Machinists and related occupations	350	250	.71
Blacksmiths, forgemen, hammermen	10	0	*
Boilermakers	10	20	2.00
Heat treaters, annealers, temperers	10	10	1.00
Millwrights	30	30	1.00
Molders, metal (except coremaker)	50	50	1.00
Pattern makers, metal and wood	10	10	1.00
Rollers and roll hands	0	*	*
Sheetmetal workers	130	170	1.31
Toolmakers, diemakers, setters	30	40	1.33
Mechanics and repairmen	1,480	2,210	1.49
Airplane mechanics and repairmen	50	20	.40
Motor vehicle mechanics	400	310	.78
Office machine mechanics	30	40	1.33
Radio and T.V. mechanics	30	40	1.33
Railroad and car shop mechanics	10	10	1.00
Other mechanics and repairmen	970	1,790	1.85
Printing trades craftsmen	90	70	.78
Compositors and typesetters	50	10	.20
Electrotypers and stereotypers	0	0	0
Engravers except photoengravers	20	20	1.00
Photoengravers, lithographers	0	10	0
Pressmen and plate printers	20	30	1.50
Transportation and public utility craftsmen	230	180	.78
Linemen and servicemen	220	170	.77
Locomotive engineers	10	30	3.00
Locomotive firemen	— 10	— 20	2.00
Other craftsmen and kindred workers	680	800	1.18
Bakers	50	0	*
Cabinetmakers	30	20	.67
Cranemen, derrick, hoistmen	60	80	1.33
Glaziers	0	10	0
Jewelers and watchmakers	20	20	1.00
Loomfixers	200	240	1.20
Opticians, lens grinders	10	10	1.00
Inspectors, log and lumber	0	20	0
Inspectors, other	40	90	2.25
Upholsterers	20	40	2.00
Craftsmen, kindred, n.e.c.	240	280	1.17
Operatives and Kindred Workers	13,570	11,340	.84
Drivers and deliverymen	1,520	1,810	1.19
Drivers, bus, truck, tractor	1,200	1,390	1.16

APPENDIX TABLE 4. ESTIMATED AVERAGE ANNUAL NEW JOB ENTRANTS EXPERIENCED FROM 1960-1968 AND PROJECTED REQUIRED FROM 1968-1975 BY OCCUPATION IN SOUTH CAROLINA—Continued

Occupation	Annual Average New Job Entrants		
	Experienced Need 1960-1968	Projected Required 1968-1975	Ratio of Projected Required To Experienced Need
Deliverymen, routemen	310	420	1.35
Transportation and public utility operators	40	50	1.25
Brakemen, switchmen	0	30	0
Powerstation operators	30	20	.67
Sailors and deck hands	10	0	*
Semiskilled metalworkers	990	710	.71
Assemblers, metalworking C-A	20	20	1.00
Assemblers, metalworking C-B	100	90	.90
Inspectors, metalworking C-B	130	110	.85
Machine tool operators C-B	330	120	.36
Electroplaters	20	20	1.00
Electroplater helpers	40	30	.75
Furnacemen, smeltermen	30	20	.67
Heaters, metal	0	0	0
Welders, flamecutters	310	300	.97
Semiskilled textile occupations	3,250	1.440	.44
Knitters, loopers, toppers	40	20	.50
Spinners, textile	570	— 260	— .46
Weavers, textile	550	— 280	— .51
Sewers and stitchers, manufacturing	2,090	1,960	.94
Other operatives and kindred	7,760	7,320	.94
Asbestos, insulation workers	30	30	1.00
Attendant, auto service and parking	100	260	2.60
Blasters and powdermen	0	0	0
Laundry, dry cleaning operators	260	110	.42
Mine operatives, laborers, n.e.c.	0	20	*
Meat cutters, except meat packing	80	40	.50
Operatives and kindred, n.e.c.	7,300	6,860	.94
Service Workers	8,350	10,480	1.26
Private household wørkers	3,700	4,120	1.11
Protective service	340	330	.97
Firemen	40	40	1.00
Policemen, other law enforcement officers	130	104	.80
Guards, watchmen, doorkeepers	170	180	1.10
Food service workers	1,420	1,480	1.04
Bartenders	10	10	1.00
Cooks except private household	680	610	.90
Counter, fountain workers	140	160	1.14
Waiters, waitresses	660	700	1.17
Other service workers	2,880	4,560	1.58
Airline stewards, stewardesses	0	0	0
Attendants, hospital and other	450	620	1.38
Charwomen and cleaners	240	320	1.33
Janitors and sextons	610	670	1.10
Nurses, practical	170	200	1.18
Other service workers, n.e.c.	1,410	2,750	1.95
Laborers, except Farm and Mine	1,950	500	.26
Farmers and Farm Workers	—4,550	—2,090	.46

[1] Individual amounts may not add to totals due to rounding.